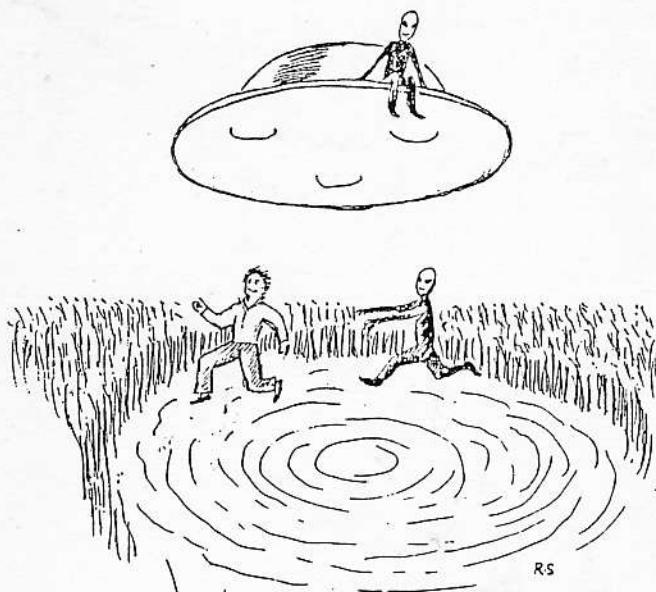


CONTROVERSY OF THE CIRCLES

AN INVESTIGATION OF THE CROP CIRCLES MYSTERY



COVER DESIGN BY ROY SANDBACH

REPORT COMPILED BY: PAUL FULLER & JENNY RANDLES

ON BEHALF OF

buFora



INTRODUCTION:

This book forms BUFORA's position statement on the question of the mystery crop circles, prior to the summer 1989 'season'. It serves as a sequel and companion to our 1986 publication 'Mystery of the Circles'.

We have resisted the temptation to recycle material from that earlier work. This book is much expanded, to take account of major developments in the intervening period and has been compiled as a complete new publication. It sets out what we consider to be all of the information you should need to formulate your own opinion regarding this intriguing phenomenon.

'Mystery of the Circles' proved a great success, but events have moved on at a considerable pace since then. After selling out two editions it was opportune and necessary not merely to reprint but to do much more. This was especially true since in the summer of 1989 Dr Terence Meaden published his important theory in some depth for fellow meteorologists and the two associates of Flying Saucer Review, Colin Andrews and Pat Delgado, published their own thesis discussing their own interpretation.

BUFORA, as the British UFO Research Association, became involved in this enquiry almost by accident, but also because the circles were viewed by many sources as a 'UFO' mystery. Our task, as a responsible investigatory body deeply concerned with scientific credibility and respect for our field, was to evaluate all aspects of the debate and report back. This we have done and it may well be that you will be surprised by our conclusions.

The table of content below ascribes individual chapters to individual authors, who take responsibility for what they have written. However, both authors have heavily edited one another's text and provided considerable input. The publication is in all true senses of the term a joint effort.

It is equally - we hope - a sensible, rational examination of one of the most fascinating and unusual phenomena to have occurred in recent years. If it makes you sit back and think, then it will have done its job.

Paul Fuller and Jenny Randles June 1989

CONTENTS

Chapter 1	A social history of the circles	Jenny Randles	page 3
Chapter 2	The UFOlogist's paradigm	Paul Fuller	page 30
Chapter 3	The circles characteristics	Paul Fuller	page 40
Chapter 4	The 'Hoax' theory	Paul Fuller	page 50
Chapter 5	The 'UFO' theory	Jenny Randles	page 56
Chapter 6	The 'Vortex' theory	Paul Fuller	page 66
Chapter 7	The BUFORA / TORRO survey	Paul Fuller	page 87
Chapter 8	The London debates	Jenny Randles	page 94
Chapter 9	Implications for UFOlogy	Jenny Randles	page 96
Chapter 10	Conclusions and commentaries	Various	page 101
	Acknowledgments, addresses and references		page 111

CHAPTER (1): A SOCIAL HISTORY OF THE CIRCLES PHENOMENON -

Something mighty odd has been going on in the English West Country ever since the summer of 1980. Mysterious circles have been found; appearing as if from nowhere in fields of ordinary cereal crop. What is causing these strange patterns? Are we being invaded from outer space? Can they be the work of hoaxers? Or is there some kind of natural, scientific explanation?

Before we dig into the murky past of this phenomenon and assess the work that BUFORA has carried out, an important first step must be taken. We should set these circles into their social and historical context so that a number of false impressions and fallacies can be dispelled. These insights may then turn out to be fundamental to our understanding of the problem.

Most sources will tell you that the 'circles' first came to light on 13 August 1980, when three were reported in fields of oat (not corn as is popularly believed) that were owned by farmer John Scull of Westbury in Wiltshire. His land is beside the spectacular 'White Horse Hill' where a wonderful ancient portrait of a giant horse adorns the slopes and attracts tourists from all over the world. It is also just a few miles north of the town of Warminster, which is equally *infamous* in UFO lore as the place where UFOs 'landed' in abundance during the 'hippy' era of the sixties. So many and varied were the alleged manifestations of the cutely named 'Warminster thing' that hundreds of media stories were written, several popular books were published and the area still boasts UFO graffiti from the thousands of visitors who flock there hoping for a personal encounter with the unknown.

Warminster had been off the UFO map for more than a decade when the circles appeared. Their arrival was to say the least opportune and offered local UFOlogists the prospect of a new spell of celebrity status.

Fortunately, the original press account in the Wiltshire Times (15 August 1980) was spotted by Ian Mrzyglod and colleagues from an embryonic West Country UFO group (PROBE). Ian was editor of their highly objective journal Probe Report and soon afterwards became a director of BUFORA (the British UFO Research Association). Unlike some more excitable sources, Mrzyglod was determined to treat this discovery as just one more case to be studiously investigated. He was well aware of the high probability that there would be some sort of down-to-earth explanation.

On 16 August 1980 Ian visited Mr Scull's field with colleague Mike Seager. They learnt that the first of the three circles had actually been found in May. Little thought had been given to them by the farmer until the other two materialised in an adjacent field. These two were about 450 feet apart from one another. One had seemingly appeared on the morning of 21 July and the other early on 31 July 1980. Upon inspection by UFOlogists, two weeks later, only the latter two were left, as John Scull had harvested the field containing the original circle. He had decided to show off the remaining traces before he started work on that particular field, inevitably resulting in the obliteration of this mildly curious oddity.

The circles were of slightly differing sizes (close to 60 feet in diameter). They were near circular, but on close examination it was shown that neither were perfect circles.

Mr Scull had first complained to the local school of infantry, because he had initially assumed the circles to be caused by a hovering helicopter. This part of Wiltshire has a great deal of military activity, from ground troops and tanks on manoeuvres to all manner of aircraft on exercise. The farmer's first impression was a perfectly reasonable one; although it later became clear that it was unlikely. Circles of this type do not seem to be produced by hovering helicopters. The military categorically denied all responsibility (and were this time probably telling the truth!).

Interesting features of the larger of the two circles was a small spur at the one o'clock position and an indented spur at four o'clock. Despite studies of samples by Bristol University, no immediate explanation was forthcoming; although to the lasting credit of Ian Mrzyglod and PROBE they established contact with meteorologist, Dr Terence Meaden, very quickly, began to share information with him and were soon on their way toward satisfaction that a weather-based solution lay at the heart of the mystery.

However, at this point we need to backtrack in time just a little. For the Westbury circles measured only the start of the 'circles phenomenon' in so far as popular attention was concerned. The local media publicity, which adopted the theme 'did a spaceship create the marks?', and one national story in a short-lived news magazine called Now, served to generate a focus. By carving out an identity for the phenomenon it ensured that in future years people had a place to relate their observations. The same thing occurred when an American light plane pilot spotted strange shapes in the sky over mountains in Washington State. They received the name 'flying saucer' and became publicised around the world. That was in June 1947 and the news story triggered people to see more 'saucers'. Of course, long before then strange things had always been visible in the sky from time to time, but there was no suitable label to attach to these experiences and no focused media promotion to ensure their preservation.

In the same way, we know with certainty that 'mystery circles' were found both before 1980 and in locations other than Wiltshire. Some were even reported by witnesses or the media at the time. They simply escaped widespread publicity by virtue of being considered a one-off local anomaly.

Looking at the circles in this entirely new way, as offered by hindsight, proves to be most illuminating.

For example, the Evesham Journal as long ago as 10 June 1960 has a report headed; "Flying Saucer at Evenlode?". It relates the discovery by farmer William Edwards of "two mysterious circles, one inside the other... in one of the fields of his farm". It did achieve some interest amongst UFOlogists who were early forerunners of BUFORA. John Llewellyn went to the site and produced a report for a London group on what he discovered there.

The field involved was midway between Chastleton and Evenlode in eastern Gloucestershire, 50 miles north of Westbury (which is often - inaccurately - considered the most northerly location of a post 1980 circle). The delightful Cotswold region sporting the 1960 set is also just three or four miles east of the famous Rollright megalithic monument.

Mr Edwards, who still lives in the area, kindly supplied BUFORA with details of his observation and a sketch of what the rings were like. His field was simply formed of grass, as he had a stock of sheep. He had the farm for over 20 years and 1960 was the only time in which the effect was seen. He found it at 8 am on the morning of 3 June and he is positive that it must have formed during the previous night as he had been at the spot the day before.

This particular formation is especially important, because it was one of the type known as a double ring, with one smaller circle precisely located inside a slightly larger one. In modern circles lone double rings appeared only from the summer of 1986 onwards and so convinced some people they were evidence of an "intelligent" progression of the patterns. This is one of the reasons why a few sources choose to regard the circles as the product of an "alien" race. That a form of double ring had appeared and been given a small item in the local press fully two decades before this vigorous support for such an exotic explanation is the best possible indication that a rare, long-term natural phenomenon has been at work.

Hoaxing is almost completely out of the question in the Gloucestershire case. The field involved was a long way from any road or vantage point. Absolutely no purpose would have been served by anybody manufacturing this particular pattern as it created minimal local attention and never seems to have been pursued or exposed as a hoax.

However, if this were a unique report then it might seem less significant. The fact is that it is far from unique. There was an interesting case from Whippingham, just across the Solent on the northern tip of the Isle of Wight. This was on 10 July 1967, when a long trail of 'UFO landing marks' were discovered after the sighting of a dark mass. The resultant damage was very similar to that created by a short-lived travelling whirlwind and the close comparisons between this case and two other 'whirlwinds' actually reported as 'UFOs' (those in north Staffordshire, July 1973 and Northumbria, July 1977 - both discussed in a later chapter) all tend to suggest a common denominator. That denominator presumably must be a weather-based phenomenon.

These facts cannot be ignored. They were extensively documented within the media and UFO literature at the time and yet seem to have been forgotten by some current researchers. But they have all too obvious parallels with and implications for the modern-day circles.

Equally relevant are the anecdotal reports that have come to light regarding unpublicised mystery circles both elsewhere and prior to 1980.

The elsewhere category is amply fulfilled by a family near Waverton in Cheshire, just south of Chester, who report two areas which have repeatedly produced circle formations almost every year since 1981 (the family moved into the area during 1978). This phenomenon, described at my interview with them, seems the same one as regularly occurring 200 miles south, but the fields are not in any prominently visible location and there has been no local media interest to channel the reporting. The circles, including a four circle lateral alignment on one occasion, have tended to appear around early August, just prior to harvesting. The family who had regularly seen them had assumed they were the product of rural animal life; although surprised by their size. Some roughly circular depressions in grass can be common products of some wild mammal species marking out their territory.

Interestingly, this was the reaction of Joe Lawrence at Earl Shilton in western Leicestershire (a county geographically placed midway between Cheshire and the Hampshire/Wiltshire crop circles). Foxes were the assumed cause of the circles reported here as long ago as 1940-41 !

BUFORA Investigator Clive Potter found that there was a larger circle, with two smaller ones nearby (again in Cheshire there was usually one larger 'parent' with attendant half-sized circles). According to the original letter from Joe Lawrence, his farmer friends say the Earl Shilton circles had appeared even before the 1940s and were fairly commonplace in that particular Leicestershire field. This may well suggest that something about the topography or geography of the area could be an important factor.

Both these two more northerly circle sites were first reported to meteorologist, Dr Terence Meaden, in late 1988 after national media publicity for his research. They were then followed up by BUFORA investigators working with him. The witnesses explained that they had not reported what they saw any earlier because they had not considered the circles to be of any scientific importance. Fortunately, they had missed the hysterical publicity for the theory that the circles were caused by UFOs - an idea which none of them endorsed.

There is little question that strong evidence does now exists for a phenomenon that has occurred throughout Britain and well before 1980. This seems to make it virtually certain that a natural solution must be found. Why then resort to esoteric explanations such as spaceships or unknown force fields, when simpler resolutions are suggested? Surely these only seem necessary if we have an intelligently organised spate of circle activity which is recent in origin? Although this may seem to be the case on first glance at the circles phenomenon, joint research between BUFORA and meteorologists such as Dr Meaden has proven this to be an artefact of the social climate behind the reporting of the circles. Although, it is true, the more complex quintuplet sets, as yet, appear to have only minimal historical precedent. Is that a hint that these may be candidates for hoaxing?

But another interesting question remains. Have circles appeared outside of England (which is where all the sites so far referenced have been located)? Indeed, the answer is once again -yes. And, that fact has been known to any careful student of the phenomenon since at least 1983.

In April of that year, Perry Petrakis, one of the editors of the respected French UFO journal Ovni Presence (translated as 'The UFO Presence') wrote to Ian Mrzyglod and Probe Report. They published his letter (Vol 3 No 4, p. 4), in which he describes an alleged UFO landing which he and colleagues at the group A.E.S.V. investigated on 20 May 1977. This was at Aix-en-Provence in south eastern France.

In this significant case a circle was discovered in a cereal crop by a farmer. He became convinced that a UFO had caused the formation. Fortunately, these investigators behaved admirably and were able to demonstrate that a meteorological explanation seemed to be the most likely answer. Their theory gained even greater support when it was discovered that there were numerous other similar sites in the surrounding Durance Valley. Despite local television and media sources taking the story to heart, the fuss died down because a responsible UFO group chose to support a conventional explanation to 'demystify' the affair, when they might have been expected to promote the idea championed by excitable journalists.

We consider all of this evidence crucial towards an understanding of the mystery circles as they have manifested in southern England since 1980. Of course, all media sources and most self-professed 'experts' on the phenomenon who have been helping fuel the controversy have been in apparent ignorance of these facts, or they do at least ignore the consequences which those facts seem to produce. Bearing all of that in mind, let us pick up the story of the crop circles in the Hampshire/Wiltshire area back where we left them in the wake of the first minor flap in summer 1980.

It is worth noting that the most vociferous early proponent of the connection between the circles and UFOs was Ken Rogers, who was a kingpin in the British UFO Society - an extremist group promoting the view that UFOs are extraterrestrial in origin. As with the Aetherius Society, a semi-religious body adhering to 'spaceship' ideology, their endorsement of more sensational theories on the basis of limited evidence, necessarily brings unqualified dismissal from responsible groups such as BUFORA and PROBE.

Ken Rogers was dynamic in the Warminster area and immediately saw the potential of these circles as the 'landing marks' of a giant UFO. He had touted the idea in the influential piece published by Now magazine. When, in the summer of 1981, three more circles were discovered, Rogers was soon spreading the word to the media once again.

These new circles were all in a line within a single field at Cheesefoot Head, near Winchester, Hampshire. This is about 40 miles east of Westbury, with the famous Stonehenge monument placed between the two in a near straight-line on the map. Along with the circular plan of ancient sites such as Stonehenge, this 'clue' was soon to provide more hope for those delighting in wild speculation about the 'alien' forces behind the mystery of the circles. Was Stonehenge a lasting testament to the 'truth' that these UFOs or mysterious power sources had created circles in the same area even tens of thousands of years ago? Were the stone circles (whose size and dimensions are similar to typical crop circles) built to deify the rings?

Whilst the Southern Evening Echo (26 and 28 August 1981) was going to town quoting Ken Rogers' views about UFOs and citing other local 'armchair experts' who were proposing solutions as varied as helicopters, mindless vandals and animals, the serious investigation work was still continuing well out of the public gaze.

Six months earlier, in Probe Report (Vol 1 No 4, March 1981) Ian Mrzyglod had published a letter from a Mr W. Chester of Hounslow, Middlesex, who reported that he had personally witnessed in summer "very localised whirlwinds in otherwise calm conditions" which "seem to describe a spiral pattern". He speculated that "one of these, moving across the standing crops from place to place, might have been responsible" (for the 1980 Westbury circles).

Three months later in Probe Report (Vol 2 No 1, June 1981) Dr Meaden first addressed the UFO community in an honourable attempt to bring some sanity into the subject. He must have been tempted to leave UFOlogy to its own idiosyncracies and had, in fact, written his initial paper that March in the Journal of Meteorology, where he expressed the opinion that an obscure species of whirlwind probably caused the previous summers' Westbury circles. He later decided against this terminology and throughout this report when you see the word 'whirlwind' you should bear in mind that he Dr Meaden is actually discussing a new type of atmospheric vortex. In his open letter to UFOlogists he again made his views clear, stating "hundreds of minor whirlwinds are seen every summer ... whirlwind diameters of up to 20 metres (60 feet) are common." These given proportions fitted all too well the largest of the circles then known, or to be discovered in later years.

The new events of summer 1981 did nothing to effect the views of Dr Meaden, Ian Mrzyglod, or the groups the UFOlogist worked with (PROBE and BUFORA). The scientific solution being proposed made sense to those of us who had studied the data and BUFORA recognised the importance of a rational approach, such as that being pioneered by Probe Report. Indeed, BUFORA arranged for copies of that magazine to be sent to all its members as part of their subscription. So nobody who might be concerned with serious UFO research in Britain could plead ignorance as to what was happening about the crop circles, even if they did not have access to Dr Meaden's more technical reports in the meteorological press.

Ian Mrzyglod and Terence Meaden combined forces in the December 1981 issue of Probe Report (Vol 2 No 3, pp 4-6) to summarise the results of the investigation of the Cheesefoot Head circles of 1981. They described in layman's terms Dr Meaden's then novel idea for a new type of whirlwind operating under special geographical conditions. Whilst PROBE noted that local villagers near the circle site thought that the weather was the most likely cause, the apparently geometrical formation of one large central 'circle' and two smaller 'satellites' seemed in many eyes far too artificial to be caused by such a random force as 'the wind'. However, Dr Meaden made clear that the creation of the formation (on a single occasion and by way of very short-lived whirlwind systems) was fully consistent with what was known about the dynamics of air movement and the local terrain.

One suggestion by PROBE was now very appropriate. A careful monitor on the two sites (Cheesefoot Head and Westbury) would be carried out during the summer of 1982, in anticipation that more circles might be found. This act of concentrated attention along with the period of local publicity may in itself have been enough to ensure the preservation of a mystery.

Not surprisingly, there was some reaction against the theory being endorsed by PROBE. Readers wrote in to say that IF whirlwinds were responsible, then surely the meteorological office would have photographs of similar damage on record and surely they would occur elsewhere other than in the 'UFO rich' lands around Warminster. These doubts were understandable. Ian Mrzyglod perceptively commented that other circles may well exist elsewhere but had no attendant local UFO mythology to make them newsworthy and so were not being recorded. He also addressed the question of how the wind could produce such precise patterns and why nobody had apparently witnessed or photographed a whirlwind creating a circle.

Probe Report Vol 2 No 4 in March 1982 contained some fascinating photographs supplied by Dr Meaden to help with his case. These were taken by Roy Williamson on 18 August 1976 in an already harvested cereal field between Braintree and Halstead in Essex. The five sequential photographs depict without any doubt a small whirlwind moving slowly a short distance and creating roughly circular swirled damage on the ground. The photographs were taken during the three minute lifespan of the whirlwind and there are very good reasons to believe that if the same phenomenon had appeared in an unharvested field it might have created more uniform damage due to the greater resistivity of the crop preventing lateral motion of the vortex.

Another impressive factor was that cases such as this, plus the two known circle sets then discovered in southern England, tied in with the 'whirlwind season' of July to August. Indeed, from the historical records it can be seen that the three major whirlwind events related as UFOs (those in Northumbria, Staffordshire and the Isle of Wight) had all occurred in the period between the 3rd and 10th July, which seemed to represent the usual optimum 'window' for whirlwind formation each summer. Indeed, on 10 July 1976 (that year having had an exceptionally hot British summer) Dr Meaden's files boast another photograph, taken at Woodside in Hertfordshire and depicting a small, near stationary whirlwind, appearing in front of several eye-witnesses. This did not create much ground damage and was not over a cereal crop.

This evidence was seemingly persuasive to all but those who desperately needed a more exotic solution for the mystery. However, the summer of 1982 was now to be a surprise and a disappointment. Despite the careful monitor, no new circles were found or reported through the media.

The weather was not very good, which could be relevant. However, when all hope was seemingly gone, fate intervened. Ian Mrzyglod was asked to write an article on the circles for The Unexplained, a weekly encyclopedia of 'mysteries' on sale in newsagents. He saw this as a good opportunity to remove the 'mystery' from the circles. But by fortune one of the magazines tens of thousands of readers had come across a crop circle at a new site on 10 August 1982 and reported it to the magazine as a strange anomaly.

This man was apparently unaware of the publicity during the previous two summers throughout Hampshire and Wiltshire and thought that what he had found was a unique 'unexplained' phenomenon. This site featured a simple, straightforward circle of around 50 feet diameter. It was remarkable mainly by virtue of its location; below Cley Hill to the west of Warminster. This spot was one of the most famous skywatching vantage points where the UFO devotees of the sixties had flocked to view the allegedly extra-terrestrial 'thing'!

That the local media had missed this heaven-sent 'photo opportunity' was ironic. It was probably due to the circle's near invisibility from ground level or closest roads. You could only really see it from the hill itself. In fact, when Ian Mrzyglod went there on 27 August, he not only found this circle but also a second one, ten feet larger and sitting in an adjacent field. This particular crop had been harvested, but the circle was still plainly evident despite that fact.

Speaking with local farmers who were engaged in harvesting, Ian Mrzyglod found widespread support for the whirlwind theory. There were good reasons for this, which the farmers kindly pointed out. They had personally seen whirlwinds in these same fields on several occasions. And some smaller circles had been left in their wake. Ian Mrzyglod inspected one, about 15 feet in diameter. This was further away from the base of the hill and showed evidence that the wind had been less severe and less localised, creating a not quite perfect or fully depressed effect. As the investigator himself concluded, this was clearly the result of a smaller, travelling whirlwind. But, the fact that it had created precisely the sort of pattern one might predict and that it was located right alongside full blown members of the circles phenomenon could only be major support, yet again, for the idea that something akin to a whirlwind WAS behind the entire business.

Probe Report made this clear in October 1982. BUFORA had now accepted as an organisation that this was probably the answer; although we supported the plans which PROBE had mooted to continue site monitoring in 1983. Useful new data might well emerge that would be of help to meteorologists. The fact that despite the previous years of publicity not one single UFO sighting (not even an obvious hoax) had been reported in connection with the circles was even more significant. Probe Report closed the year rather optimistically suggesting that; "maybe at last an element of common sense has finally infiltrated (the subject)."

FSR - Flying Saucers Responsible?

A new person had recently entered the circles mystery. This was retired design engineer Pat Delgado, of Alresford in Hampshire. He told readers of that delightful magazine of the 'independent thinker' with the quaint, old-fashioned title, Flying Saucer Review, that he had first discovered the mystery on 19 August 1981. Some friends had told him about the circles near Winchester and in the first of what was to be many speculative articles on the subject (Vol 27 No 5 -dated March 1982) Delgado reported what he found on visiting the site (of what was, of course, seemingly unknown to him, not the first circle set to be discovered). Like many after their initial glimpse, he was persuaded that "the rings could only have been made by something descending on to the field."

What was Mr Delgado's first step towards finding a rational solution for the circles phenomenon? Was it contact with meteorologists such as Dr Meaden, or the taking of samples and sending them onto a university, as PROBE had determined to be their priority? Apparently not. This is what Pat Delgado told readers of FSR (as the magazine calls itself to hide its otherwise rather embarrassing name); "On Monday afternoon, August 24th, I telephoned BBC TV Southampton and told the news editor about the rings... I rang ITV Southampton, and the news editor there was extremely interested."... It appears that he decided the appropriate action was to get the rings a public airing and, with the TV promotion now well assured, a whole new media mythology was set to dominate the coming years.

Delgado did claim that he had discovered other circle sets around Winchester that summer and even at this early stage he was prepared to publically speculate about UFOs being to blame, by virtue of an alleged alignment between three of the 1981 sites and a famous (somewhat odd) close encounter story that occurred near that town. But as this event took place in late 1976 (mistakenly said to be 1975 in his FSR article) the connection with the circles phenomenon seems rather unlikely.

There was very little reaction to his piece expressed by readers of FSR; but a letter from UFOlogist one was published. This supported Pat Delgado's somewhat strained attempt to link the Winchester sighting with the circles and the patterns that were now being reported.

However, this enhancement for the UFO connection was important, because it helped ensure that Ian Mrzyglod's optimism for 1983 was rapidly demolished. The summer turned out to be one of the best on record (the hottest July in 300 years of data). Conditions for whirlwind formation were regularly first class. Ian Mrzyglod had also published his sensible review article in The Unexplained early in that spring (Issue 121) and this was probably read by most people in Britain interested in UFOs or the paranormal, including many journalists. The consequence of these two factors should have been good, tempering the media hysteria and ensuring that not all UFOlogists were to be associated with the rather far-fetched theories emanating from certain quarters. Unfortunately, the PROBE team suddenly found that it now had to compete for public attention with the new-found 'UFO-link' which FSR had begun to take seriously.

It is interesting to note that Pat Delgado was already persuaded that he had discovered a mysterious new force of nature, which he had chosen to name the 'Delgado Effect'. He later published details of his 1978 discovery in a series of three articles for the paranormal magazine, The Unknown (March, April and May 1987). He claims this can be demonstrated by anyone if you stick a lump of plasticine on a table top, arrange a needle vertically inside this (with the point uppermost) and balance on the point a milk bottle top carefully shaped into a dome. If you now gradually cup your hands around the silver foil then it will rotate. That this is interestingly akin to the sort of wind vortex effects possibly occurring at the circle sites may be noteworthy. But is this really a force new to mankind or just an interesting demonstration of an already existent and scientifically understood phenomenon? It seems wise to reserve judgement.

In an article about Kirlian Photography in "Against All Reason" (Orbis 1984 p 64) Professor A.J. Ellison - a leading expert in electronic engineering - describes how the human body is "surrounded by a field of moving air". This "radiating thermal field" is the product of temperature differences between the body and its surroundings, the existence of weak electromagnetic fields, and evaporating perspiration which throws off various particles long recognised by medical science as a useful diagnostic tool in the field of thermography. Perhaps this may be relevant to our assessment of the 'Delgado Effect'?

Pat Delgado was subsequently quoted widely in public speculating that the circles could be a product of anomalous energy forces. Given that he had already developed opinions on such matters well before his investigation of the circles, one may reasonably assume that there might be an implied association with his research into the 'Delgado Effect'.

In summer 1983 circles appeared all over Hampshire and adjacent counties (including a first one at Oxfordshire near Wantage). As Pat Delgado told FSR (Vol 29 No 1, October 1983) he was called by friends and informed that a set had appeared at Cheesefoot Head near Winchester overnight on 19/20 June, in almost exactly the same spot as they had been found in 1981 (another indication that 'natural' factors seem to be responsible for the creation of the circles). If you recall the 1981 formation at Cheesefoot was an unprecedented triple alignment with one large central circle and a smaller satellite at each end. The 1983 pattern had two extra circles at the 12 o'clock and 6 o'clock positions, making a quintuplet pattern of five.

Again Pat Delgado went and photographed the formation and then decided to involve the media. He phoned the BBC and local ITV stations, who were naturally keen to view the circles. They were being handed the perfect 'silly season' story, which all journalists love in the summer. Yet despite the intense media interest BUFORA chose to avoid wild speculation. The addition of the Wantage circles to the data was rather unfortunate, as it allowed Pat Delgado to note how this site now formed a triangle (more or less) with Westbury and Winchester. As he put it; "Is it purely coincidental that all three place names...commence with a 'W'?" With logic like that he not surprisingly concluded; "In my opinion these circles are formed by some force unknown to us." Yet out of these same "facts", Ian Mrzyglod sensibly suggested a clever trickster might be attempting to produce clues about a mythical 'Warminster Triangle', by hoaxing circles at 'W' sites.

This particular version of the 'Delgado Effect' was to be influential on the media. In contrast, Ian Mrzyglod, PROBE, BUFORA and Dr Meaden were also still fascinated by the phenomenon and working quietly to resolve it.

Circles appeared again in the lee of Cley Hill near Warminster and as early as May, but the farmer kept them to himself because he was wary of sightseers trampling all over his crop and costing him money in the process. Dr Meaden found a quintuplet set there on 9 July, but after discussions with PROBE investigators decided that in the hyped-up climate of publicity now aflame the last thing that was needed was to point out a circle set beside one of Warminster's foremost skywatching venues!

However, it was again the area around Westbury that generated the most events. These included single circles, areas of damage which indicate less disciplined whirlwind activity and a complex quintuplet similar to those at Cheesefoot Head and Cley Hill. Inevitably, the 'boring' simple circles were ignored and the complex (artificial looking) patterns were promoted, thus giving the false impression that this was ALL that was happening in 1983. In fact, there were more incidents than ever before, by quite some margin, and a logical case could be made out for a connection between this plethora and the spectacular hot weather that was also producing far more whirlwind vortices than in any summer for many years.

Of course, the whirlwind theory now seemed in some trouble. Even Dr Meaden was scratching his head at the quintuplets. Multiple whirlwinds do occur and he felt able to account for triple alignments, but these sets of five were so precise in nature that many saw them as support for the UFO landing theory. However, there was another possibility. Given the precedents and the publicity within the UFO community (FSR alone has several thousand readers) was there any chance that some of these complex circle sets might be products of copycat hoaxers? Could they have been manufactured to counter the apparent success of the meteorological explanations?

This possibility took an interesting turn when several PROBE investigators visited the quintuplet at Westbury on 6 August 1983. For there, right next to the first set, was a second smaller but perfect combination of five circles! It had appeared in the thick of the publicity.

The media machine that various increasingly vociferous UFOlogists had helped swing into motion had not stopped at local television or newspapers this time. The Daily Express went to town and featured the various circle sites over three days (11, 12 and 15 July 1983). Such was the fuss that after the first article almost every national newspaper took an interest. By an unfortunate coincidence I had a serious book about UFO investigation published on 13 July. It would have been easy to use the hype as an excuse to jump on the bandwagon, but I was well aware that any such action might suggest I was abusing (or hoaxing!) circles to promote my book. That would have destroyed years of hard work for BUFORA by Ian Mrzyglod and others.

On the day of the first Express article it seemed like every reporter in Britain called me for quotes and I had to patiently explain to each one our three years of research. Most of them had assumed these 1983 circles were the first that had ever been reported and hardly any of the press stories mentioned that this was a long standing and recurrent phenomenon. I resisted inducements to appear on national BBC and Independent television, because it was obvious that there was no prospect of reasoned debate on the issue. These sources merely expected me to reinforce the view that 'it's all caused by a spaceship' and my rejection of this notion was met with varying degrees of incredulity from the journalists who called.

The Steven Spielberg movie 'E.T.' was doing the rounds at the time and that was also relevant. Indeed, the Express sent their famed columnist Jean Rook to one circle site to write a poetic ode to E.T. after finding a poppy in the middle of the corn! Where, you may ask, was the investigative reporter trying his or her best to resolve the mystery of these circles?

The truth is only obvious when you appreciate that this issue was not considered to be a 'news' story by the media. It was a UFO item, and those are fair game for jokes and light-hearted treatment.

Meanwhile, the Daily Star (one of those to whom I had painstakingly explained Dr Meaden's theory) had the audacity to produce a piece claiming that THEY had 'solved' the mystery (as whirlwinds) by doing just as I recommended and phoning the weather centre! Surprisingly, the quote they reproduced was very favourable to Dr Meaden; although at that stage most meteorologists were noncommittal. On the other hand, the Express did quote me at length on 12 July in my capacity as Director of Investigations for BUFORA. Admittedly this was alongside an interview with the Earl of Clancarty, otherwise known as amiable UFO scribe Brinsley Le Poer Trench. The Earl talked enthusiastically about UFOs, the circles and 'ley-line' energy, seeking to inter-relate them all. However, at least my views on the traditions of Warminster, the history of the circles and the natural weather-based solution that BUFORA was vigorously supporting did achieve some attention. BUFORA was not seeking self credit, it should be stressed. But we were now very concerned about salvaging some credibility for UFOlogy and doing what we could to prevent the circles becoming an exaggerated myth.

The result was a wave of moral indignation from some so-called "UFO Investigators". I heard from a few who were irate and accused me of 'selling out' the subject and speaking 'claptrap'. Most of them knew only what they had read in the 1983 press stories and had a sadly ill-informed perspective on the subject. FSR also began what seemed at times like a crusade against BUFORA's stance, which saw editor Gordon Creighton refer to all those associated with the whirlwind theory in no nonsense terms. In Vol 29 No 1 Creighton commented in obviously sarcastic fashion about the sobering points offered by us through the Daily Express: "The world's leading expert in UFOs was however quoted in the press as being satisfied that the tidily distributed marks in the field were 'not mysterious, but caused by whirlwinds or tornadoes. We think the weather is to blame.' FSR readers may however be relieved to know that there is a better explanation... (etc)"

The problem here is not the honest disagreement that FSR may have with the theory BUFORA had embraced (if, indeed, they even understood what that theory was). Rather it is the way they chose to assume the weather-based solution must be ridiculous without enquiring into its nature. Readers were thus offered no discussion about Dr Meaden's investigation and BUFORA's research, or why after three years detailed study we had concluded that this work provided a viable answer that might explain the phenomenon. Later FSR even resorted to some minor distortion of the facts in order to continue their repudiation. Their obvious nemesis was usually myself; although always simply labelled with a ridiculous (if flattering!) phrase like 'Britain's top expert in UFOlogy'.

A subsequent highly responsible interview appeared in The Guardian in which I commented in detail about the circles, the media hype and why BUFORA supported Dr Meaden at least some of the way. I remarked on some sticky 'goo' found at one circle site. Analysis had suggested this was not 'spaceship residue' as certain UFO buffs would have liked. It was more mundane.

Reporter Stuart Wavell phrased my comment as follows; "The analytical verdict was "some kind of confectionary that had gone off"...A mars bar? - She insists not. 'There's not the slightest evidence to explain the circles in terms of UFOs'..." The 'mars bar' reference here is clearly seen to have been tossed in by Wavell as a minor quip, based on the name of this popular sticky sweet. But here is how Gordon Creighton and FSR chose to comment on my words in Vol 31 No 6; "...Britain's top expert in UFOs and UFOlogy had already been widely reported in the press (in fact just this once - JR) to have ruled that the mystery substance was nothing more than a decaying *mars bar*... But, of course, the presence of an old *mars bar*, thrown down on one of the 'ring' sites by some all-too-human gawper, in no way proves that the UFOs crew hailed from Wigan..."

Presumably, this implies that FSR do suspect there was a 'UFO' and a 'crew' at the site. But on what basis? And why mislead readers that I had 'widely' issued this spurious identification of the 'goo' as a *mars bar*, when I did no such thing? Is it cynical to note that such a mistake helps to damage the credibility of what the Guardian article actually said?

Given such a heavy media battle we were soon puzzling why the second set of five rings found at Westbury was achieving no publicity at all. The answer to that little riddle, when it came about, proved to be dramatic.

The hoax possibility for the quintuplet patterns had taken a knock with a major discovery that came when PROBE studied some aerial photographs of one of the original Westbury circles from 1980. This privileged vantage point offered faint but clear signs of three outer satellites surrounding this very first circle. Why three and not four as in the 1983 sets? The answer seemed to be that the fourth outer circle would have been placed exactly where a hedge bordered the field!

This revelation could negate the idea that quintuplets are recent hoaxes. They seem just as much a part of the phenomenon (whatever that may be) as the isolated circles. However, the whole business was put into the melting pot again when PROBE followed up local stories that the landowner of the Westbury site (with those 1980 circles and the twin sets of five in 1983) believed they could be hoaxed using a pole and a metal chain to mark out the crop. Alan Shepherd and his son Francis then admitted to the investigators that they HAD faked the entire second set of five (although not the original five alongside which they had placed their creation).

This dramatic and significant hoax was carried out to prove a point, but was supported by the Daily Mirror. It had been conducted just a couple of days after the Express ran their last story on 15 July 1983 and the intention was for the Mirror to film the entire process (paying 'compensation' to the Shepherd's for damage to their crops). The tabloid would then sit on this dramatic proof until their rivals at the Express touted the story of the new five-circle set. Then they and the Shepherds would expose them with a scoop! Unhappily for the Mirror it was sensible and cautious researchers who found the set and they did not run straight to the press or television with that discovery. The Express had also lost interest in the circles affair for the time being.

More hoaxing went on, as the circles now took on international dimensions. Sensational American (comic style) tabloids such as the Weekly World News (16 August 1983) came up with outrageous stories about giant UFOs landing at non-existent farms and creating circles. These items, fortunately missed by UK media, seem to have had little (if any) basis.

The saddest aspect of this sudden 'discovery' of the phenomenon by the mass media and the less cautious members of the UFO "fraternity" was that it helped Probe Report decide to shut up shop and drove Ian Mrzyglod away from UFOlogy. His temperate influence was lost; although fortunately soon replaced by BUFORA's new 'regional coordinator', Paul Fuller - living right in the midst of circle territory near Cheesefoot Head and Winchester. He was soon to face similar criticism for daring to support a simple answer and suggesting that UFOs were not creating the circles. However, the debt owed to pioneer Ian Mrzyglod by all those who care about the truth behind this phenomenon should never be overlooked. It would have been so easy for him to get swept along by the tide of publicity and use it, like some others, to boost their image or group. Instead he continued with sensible research swimming against the social currents swirling all around.

And so to 1984. What would that year bring? By now only the most naive would have expected nothing to materialise. The circus was becoming an annual ritual that, as Ian Mrzyglod had himself perceptively noted; was now "as regular as Christmas". But, of course, 1984 was also to bring its own blend of surprises.

Circles of the usual patterns (including more of the new five ring sets) turned up at most locations, such as Cley Hill, Warminster and Cheesefoot Head. By careful monitoring of the sites to a pre-set plan the more or less precise time of formation (within hours) was calculated for almost all of them. Unfortunately, the aspiration of seeing a vortex (or anything else) create one of the circles was not fulfilled.

Most of these 'old faithfuls' achieved little recognition. That was reserved for a circle in a new county - Sussex. It appeared on the evening of 26 July 1984 at Alfriston and was another quintuplet pattern. BUFORA's local coordinator, Philip Taylor, a lecturer then working at the Royal Greenwich Observatory, was instantly suspicious. The site was Cradle Hill - which by a fascinating coincidence just happened to be the same name as another main skywatch venue at Warminster. This was too good to be true and was just one reason why Philip Taylor advised the media that he and BUFORA regarded this renegade as a hoax. The Brighton Argus proudly announced "Expert solves the riddle of the rings". But, true to form, this did nothing to prevent the Daily Mail putting in its bid for the national press franchise by giving great prominence to a photograph of the Alfriston set.

The gimmick used by this normally responsible newspaper was that their photographer was none other than Labour party MP and Shadow Foreign Secretary, Dennis Healey. He lived locally and was a skilled cameraman. They used the byline "Healey's Comet" and quoted him, whilst mildly endorsing the UFO solution. All the usual twaddle about 'giant spaceships' was trotted out and despite Philip Taylor's expose the mystery tag remained. Ken Phillips was acting Director of Investigations at the time as I was ill in hospital, but his sober comments barely warranted a mention.

To BUFORA's intense chagrin, after years of fruitless effort, the Ariadne column in the prestigious journal New Scientist (16 August 1984) briefly discussed the Alfriston circles in amused tones indicating, in effect that 'they' say it's a spaceship but science knew better.

The magazine noted: "the British UFO Research Association reported darkly that 'so far, scientists have been unable to come up with a definitive solution'." This quote was out of context and completely ignored all the positive indications about a meteorological answer expressed by BUFORA for many years. Despite several communications between myself and 'Ariadne', plus two copies of our later research booklet, New Scientist insist they had treated BUFORA fairly in this matter and had no obligation (and no intention) of referring to the long and strenuous efforts we had put in to resolve the mystery. To them the whole of UFOlogy was equally guilty of the absurdities being propagated by certain members of its faction.

In such a way are myths forged and, sadly, New Scientist proved themselves as inadequate as the cheapest tabloid newspaper.

Meanwhile, FSR was having its usual fun summarising the 1984 season. They now discovered that there were regular circles at Cheesefoot Head, again ridiculed whirlwinds (without reviewing the theory, of course) and implied that UFOs were to blame. Then they carried a letter from Desmond Leslie (Vol 30, No 2) which attempted to show that there was a deep numerical significance to circle diameters. It should be added that Mr Leslie's previous claim to fame was his co-authorship with George Adamski of a book describing Adamski's space voyages care of the Venusians in order to visit trees and rivers on the moon!

1985 proved to be another quiet year with just six sets discovered. But FSR had by now elevated Pat Delgado to the ranks of its 'honoured consultants'. They introduced him as the man who had designed a brand of electric 'teasmade' and reported that, alongside a Daily Express photographer and a Surrey UFOlogist (also one of their consultants- Omar Fowler) he had "made the deepest study of these 'swirled rings in corn'". This may have been true; although surely Dr Meaden had been involved much longer and must have been in the running for that distinction? Of course, Dr Meaden was behind the theory that FSR so studiously disregarded. However, there is no doubt that the engineer, Pat Delgado, was honestly engrossed by the subject and widely associated with it by the media.

In FSR Vol 31 No 5 he took up much of the issue with his report and photographs of 1985 events. Most sets were again quintuplets (occurring at all the usual and expected locations, such as Cley Hill and Westbury - although the Winchester site was a little way from Cheesefoot Head this time). There was also a new location at Findon in Sussex.

This Findon set was interesting because the Daily Express obtained a report from field workers who first found them at 5.50 am on 29 June 1985. They described a 'hazy mist' rising briefly in a plume from the centre circle as they watched.

A few days later when I happened to be in London doing a radio show with LBC (a 24-hour news station) I was asked to pop round the corner to the Express on Fleet Street. Here I was interviewed about the circles and gave my views. I pointed out that IF a spaceship was involved, then why was nobody ever seeing it and why were the marks not the same size or completely symmetrical? As to the 'mist at dawn' rising from the Findon circle, I suggested that surely there was a possible explanation in the usual meteorological sense of moisture evaporating and rising as mist when the sun begins to warm the ground. In response I was reliably informed that the paper were working on the theory that the mist was 'exhaust fumes' from the just departed spaceship and the explanation for lack of symmetry and variation in sizes was that the UFO landing gear might sometimes skid upon touchdown.

After the summer season Pat Delgado called a meeting in Alresford, Hampshire, bringing together anyone interested in the circles. It discussed electro-magnetic forces that might cause them and speculation about UFO involvement, amongst other theories. Someone proposed a competition with a prize to the person who could fabricate the most realistic looking circle set and at the end they took a vote on the issue; "Are we all agreed that, in our opinion, these rings are not man made." The only person who refused to vote 'Yes' was Paul Fuller. Pat Delgado was surprised by this decision, but BUFORA was by then aware that some circle sets had been proven or admitted hoaxes and hoaxing surely could not be ruled out as a candidate, because it was a logical explanation.

In the very next FSR a responsible scientist, Dr Bernard Finch (yet another of their 'consultants') reported on a visit to one of the 1985 Hampshire sets with editor Gordon Creighton. He insisted that he was certain "this is a phenomenon of no known cause" and that "These circles could not be produced by natural causes. Whirlwinds...are never seen at night." Unhappily he is not correct in that assertion and, as if to prove him wrong, some months later a destructive travelling whirlwind tore through a housing estate in Worcestershire at ten minutes to one in the morning.

Unruffled, Dr Finch wrote again in FSR Vol 32 No 1, suggesting that from a study of Pat Delgado's reports he now suspected some kind of 'planetary poltergeist' force was behind the rings. Whatever a 'planetary poltergeist' may be.

One UFO 'expert' who wrote for FSR then appeared on regional TV and made the remarkable claim that UFOlogists had reports of 'craft' with exactly the same dimensions as recently reported circle formations. We still await publication of the details of these presumably astonishing reports. It must be said that BUFORA has yet to investigate any proven report of an 'alien craft' in 27 years of investigation and many thousands of cases.

However, if the previous two years had been relatively calm on the circles front, 1986 was to make up for all of that. Part of the reason was a daring plan hatched by BUFORA. Continually frustrated by the annual return to a sensational media farce, the National Investigations Committee spent the previous winter and spring planning and writing a booklet, of which the present title is a much expanded and completely new version.

This booklet was entitled 'Mystery of the Circles' and aimed to summarise all the facts, setting out why BUFORA was not supporting the UFO explanation. Part of the plan was to have it ready for the 1986 circles 'season' and as soon as the reports began, swing into action by immediately staging a press launch and open forum debate. In this way we hoped to swamp the serious media with responsible coverage on the subject and beat the tabloids at their own game.

That summer Pat Delgado was making regular vigils at the recurrent circle sites. On 5 July 1986, he and colleague Don Tuersley were rewarded for these efforts. At Cheesefoot Head, as the first light of dawn broke and the field became visible through the gloom, there, materialising before them, was a very large circle of over 70 feet diameter. The researchers had been there as light faded on 4 July. The circle had positively formed in those few nocturnal hours between around 10 pm that night and 3.40 am on the 5th.

Even more interesting was that this was not a triple set or quintuplet. But nor was it a simple isolated ring. It was a ringed circle with a surrounding rim of undamaged corn between the main circle and the outer ring. The central crop was flattened by a clockwise swirling whilst the outer ring had been rotated anti-clockwise. At the time this seemed to be a dramatic new step in the seemingly intelligent and organised progression of the baffling phenomenon. However, as we have shown earlier in this chapter (page 5), that is NOT the case. A similar type of ring achieved forgotten local media attention in Gloucestershire as far back as 1960.

This spectacular formation was in a depression known as the Devil's Punchbowl (a possible hint that circles appeared there centuries ago to provide this name?) and is prominently visible from the A 272 highway that passes by. The circles here would be a secret for no longer than it took the first cars to drive past that Saturday morning. Alerted to the discovery, BUFORA swept its action plan into operation.

Whilst Paul Fuller and Dr Meaden spent most of the next day (Sunday, 6 July) photographing and measuring the Cheesefoot Head incident, Mike Wootten, of BUFORA's publications team, and myself, as co-editor of the booklet, set up a press conference/public debate at the London Business School for one week hence. We prepared to circulate press releases to all the serious media. But a major new twist shook us all on that very Sunday.

Most of the circles researchers left Cheesefoot and went home for some tea in late afternoon. The last time we know anybody was at the site was 6.56 pm. At 7.45 pm a journalist 'discovered' a second, smaller but otherwise identical example of this unusual formation, in the same field only feet away from the first one. It had turned up in broad daylight on a summers evening in plain view of a busy 'A' road and during a maximum of a forty-nine minute spell! This was all the signal necessary for the national media to take the circles mystery to its heart yet again.

BUFORA investigations quickly recognised suspicious circumstances about this second Cheesefoot Head set. It had a number of anomalous features and when an eye witness who was at the location at 6.45 pm offered a vital, if seemingly innocuous piece of information, the doubts escalated towards later revelations that this ringed circle WAS hoaxed. How it was produced in full view of passers by without any apparent eye-witnesses is still mystifying. Paul Fuller tells the full story of this significant event later in the booklet (see: Chapter 4: 'The Hoax Theory').

The Southern Evening Echo (7 July) broke the story with a front page photograph of the two sets. Unfortunately for Pat Delgado he was quoted as saying that the "rings were too uniform and 'perfect' to be part of some hoax." In fact the second formation was not perfect. He gave his conclusion that they were created by an electro-magnetic force. Later he coined the term IUFF and was quoted by media sources as saying that these 'invisible unknown force fields' were to blame. In the Hampshire Chronicle (22 August) he even likened it to a poltergeist, presumably picking up on the ideas of his colleague, Dr Bernard Finch at FSR. It is, of course, very important that if any of us hope to be taken seriously in our speculations about the circles we must speak out when a hoax is known or suspected. Otherwise, we leave ourselves open to criticism that *all* circles are hoaxed.

It was quite surprising that of the national press the normally staid Daily Telegraph was the first to report the new Cheesefoot Head events, citing Pat Delgado's discovery. With our 'media pack' (ie press releases and booklets) on the way, BUFORA was trying to focus the attention. I appeared on national BBC radio (the 'Derek Jameson' programme) on 8 July offering a sobering view of the situation and describing BUFORA's approach for a good ten minutes. Paul Fuller persuaded the Telegraph to do a new piece (9 July), which carried the headline 'Circles 'caused by wind'' and quoted him on behalf of BUFORA, saying; "The weather seems to be the most plausible explanation, though there are a number of unanswered questions. But we are sure there is no connection with UFOs." Dr Paul Mason of the meteorological office gave a degree of support (although he later retracted most of that).

Although Pat Delgado seems not to have been immediately suspicious of this second Cheesefoot Head site, Paul Fuller was. He appeared on local television in Wessex discussing the remarkable circles at the site and warning (as he also did on Radio Solent) that hoaxes were a serious option.

The very next day two small and poorly outlined plain circles were found in Alfriston, Sussex. These were not a patch on the five ring set that Dennis Healey had photographed there two years earlier. Pat Delgado, whilst reviewing the 1986 circles in the supernatural coffee-table magazine The Unknown (June 1987) reasonably suggested this was due to the force striking young and greenish crop. Of course, these rings may also have been crude hoaxes following the national media coverage over the previous 48 hours.

It was by now very apparent to BUFORA that, possibly because the media were taking so much note of the circles these days, hoaxing was becoming an increasing factor in the ever expanding equation; although it probably was just a factor.

On Sunday, 13 July a ringed circle almost identical with that which had formed at Cheesefoot the weekend before appeared at Westbury. This was the day before BUFORA's press launch in London for 'Mystery of the Circles' (see Chapter 8). Mike Wootten and I spent the day taking extra personal copies to every national newspaper and attempting to encourage them to send representatives to the debate (to which we had invited members of the FSR team, farmers, scientists - indeed everyone with something to contribute). This paid off with two further responsible press stories from respected national sources. Thus our aim of preventing sensational publicity from the tabloids, and generating informed articles from the higher quality media instead, was successful. UFO theorising from others was, of course, having the reverse effect.

Today previewed the meeting and favoured "mini-whirlwinds descending like a vacuum cleaner" in a piece from Derek Jameson again. But best of all was a lengthy interview with myself featured in the Guardian (18 July) entitled 'Ringing the changes' in which most of BUFORA's reasoning was well brought out, including both weather-based and hoaxing interpretations. It ended with my comment "It is wrong to try to explain one inexplicable phenomenon with another."

More circles (nine sets in all) did come to light for the year and the most bizarre feature was the September demarking of the Devil's Punchbowl with the words 'We are not alone' (in the form 'WEARENOTALONE'). The farmer, Lt Col Bruce, presumably convinced some determined hoaxer had trampled down his crop, wisely destroyed the evidence through harvesting as soon as possible, although not before Pat Delgado flew over the field with his private pilot friend, 'Busty' Taylor, and preserved a useful record on film. Surely all common sense tells you this must have been a joke precipitated by the summer of publicity (indeed the letters all ran together and the 'N' was not even formed correctly, suggesting someone was in a hurry or doing it in the dark). Pat Delgado, concluded that he felt it probably was, but then surprisingly drew back from that firm conclusion, adding in FSR ... "Prolonged study makes me wonder."

Another man in the electrical field and employed by the local council was Colin Andrews. He had become interested in the circles in 1985 and worked beside Pat Delgado, soon becoming another of FSR's fast expanding 'consultants'. By 1987 he had become the head of a circle enquiry team - Circles Phenomenon Research (CPR) - claiming to have spent huge sums on researching the phenomenon. By 1988 he was co-authoring a book about the circles for a major publisher, alongside Pat Delgado.

In 1987 the media attention was only local and rather muted; although the new 'circles research' team claim to have found a large number of sets. More than ever before (over 30) were recorded at the end of the summer, spread over 14 different sites and of many varied formations. One even provided a unique feature of a double ringed circle. The quintuplet variety were back in favour at Cheesefoot Head - again materialising overnight in early July.

Pat Delgado told the local paper The Extra (6 August) that "the possibility of them being caused by UFOs could not be ruled out...It is possibly an unknown force field manifested in an unknown manner by an unknown intelligence." (Which some might translate as 'we don't know what the heck is going on!') He admitted that 1987 "has been a bumper year."

The local press did give rein to various novel theories from their readers. These created interest or amusement from time to time and ranged from collapsing archaeological sites onto which the fields had been planted to the bizarre idea that hoaxers were tethering a remote controlled model aircraft at the centre of a circle and flying it round and round near ground level, thus smashing a path through the crop!

Probably the most dramatic aspect of the year was the sudden arrival of four self-confessed hoaxers (see Chapter 4) and an alleged close encounter with a 'spaceship' which - at last - someone had the temerity to come up with at the Cheesefoot Head site (again see Chapter 5, reviewing 'The UFO Theory').

Outspoken ex fish tank manufacturer and UFO enthusiast Rex Dutta - editor of Viewpoint Aquarius, a 'new age' magazine - delighted all those who follow the eccentricities of the circles phenomenon with his allegations. These were repeated by the Winchester Gazette (3 September 1987) and contended that the Government had erected 'Secret electronic towers' at Cheesefoot Head to monitor the arrival of the 1987 rings. Quite how they were supposed to keep secret these "300 foot five-storey towers made of steel girders" was unexplained. According to Dutta the circles were proof of alien lifeforms ; "They are obviously talking to us by making different circles and formations which they hope we will think about and sort out." The Ministry of Defence, however, denied all knowledge of this 'spy tower', which is not surprising as it was actually a drilling rig which Paul Fuller subsequently observed at Braishfield, near Romsey.

The main activity of the 1987-88 period, so far as BUFORA was concerned, was not to chase round cereal fields trying to find as many circles as possible, or giving sensational unsubstantiated claims to the local media. It was instead to set up and coordinate with the meteorological organisation - TORRO - a jointly funded research project which set out to answer many questions, such as the frequency of occurrence displayed by the circles. This mammoth study (discussed in detail by Paul Fuller in Chapter 7) brought forth invaluable new information about the nature and extent of the crop circles phenomenon, its historical morphology and the attitudes and approaches of the local farmers at the very heart of the problem. We considered this a far more valuable way to develop the analysis of this subject beyond merely 'logging circles' and one more antidote to the baseless media speculations.

Of course, circles continued to manifest throughout the summer of 1988 (as they have indeed in 1989 and surely will in future). Whilst Pat Delgado and Colin Andrews were now busy accumulating painstaking data and aerial photographs for their book and, without question, doing useful documentation work in the process, they were also continuing to publish papers in the UFO literature, such as the increasingly dogmatic FSR.

Editor Gordon Creighton was pulling few punches in implied, and occasionally more explicit denouncement of Paul Fuller, Dr Meaden, myself, or anyone 'foolish' enough to support a weather based solution. By now this included most BUFORA research and investigation officers and many sensible UFOlogists who had studied the data and accepted the inevitable.

We prefer not to respond to these sometimes irresponsible comments on a tit-for-tat basis. In our opinion, the more useful response was to document all the evidence and allow readers of this booklet the option to judge for themselves why BUFORA has adopted its particular stance. Unfortunately, ESR has to date preferred not to give its readers the more prosaic arguments about the circles and, understandably enough (but we feel unwisely), concentrated on its efforts to prove that they are a phenomenon somehow related to Pat Delgado's "unknown intelligence". By not discussing much of the evidence in this book (eg the eye-witness reports of vortices actually creating circles) a less than complete picture has been offered to the UFO community via ESR.

In the meantime, Dr Meaden and TORRO were now sufficiently satisfied that they had developed their theory that it was considered time to produce their own more technical expression of the 'solution' which has been carefully formulated since those first Westbury circles came to light in 1980. It was this decision, especially when we saw some of the exciting implications for UFOlogy which have not to date been widely broached by Dr Meaden, that prompted BUFORA to decide to put together this new booklet as a companion volume to his scientific thesis. Also it will serve to an extent as an adjunct to whatever Andrews and Delgado have to say in their book.

Another notable feature of 1988 was the way the amicably conducted 'debate' between rival factions spilled over into something a little less pleasant than a trivial dispute between differing groups of opinion. As the two camps became more and more polarised and moved towards the highly visible public presentations through their respective books and writings, so a degree of acrimony crept into the media accounts. These hardly aid our long-standing quest to ensure that UFOlogy receives more scientific attention. Since there is nothing like a good old fashioned row, especially a row between 'UFO spotters', to generate voluble publicity, the 1988 media attention was greater than ever before and lead at times to what became dubbed as 'Star Wars'.

BUFORA is attempting to adopt a middle of the road stance. Our only true allegiance is to the facts of this developing mystery. We have actually been involved far longer than either Pat Delgado or Colin Andrews, or indeed most of the celebrated scientists who have recently joined their ranks.

Notable here is Professor Archie Roy - from the department of physics and astronomy at Glasgow University. He was, in fact, to claim in interview with journalist and earth mysteries researcher, Paul Sreeton, that: "The circles are a tremendously intriguing mystery - the most baffling thing I can think of." Perhaps so, but would Professor Roy like to reassess that statement in the light of our findings in this report?

BUFORA has been working on the problem since the day of the first reports in 1980 and had a close liaison with Dr Terence Meaden virtually from day one. Inevitably that fact, plus an objective review of the evidence, may have coloured our interpretation towards rapid (even premature) acceptance that there could be a meteorological solution to the mystery. But equally significant has been our fervent desire to show that UFOlogists are not all gullible idiots who jump up and down with excitement at the slightest suggestion of a mystery and swallow the most tenuous evidence as 'proof' of 'unknown forces' or 'alien intelligences'. At least, not before exhausting all conventional scientific possibilities. That sort of responsible, self policing has dominated our thinking on the circles phenomenon for many years.

The event which triggered the increase in public tension was Dr Meaden's decision to address a meteorology conference in Oxford in June 1988, with the fruits of his 8 years of research and the BUFORA/TORRO survey. His paper was surveyed extensively in the Observer (5 June) and offered the public a detailed look at why 'whirlwinds' were not as ludicrous as FSR and others had repeatedly told them they had to be.

A month later the first interesting circle discovery of the year caused a major surprise. Not only was it another new variation (a typically sized ringed circle with THREE outer satellites, arranged in an equilateral triangle around the central circle) but it was also in a field between Oadby and Stoughton in the East Midlands county of Leicestershire, over 100 miles north of the Wessex circle sites.

The local paper, the Leicester Mercury (5 July 1988) first ran the story under the heading; "UFO' rings baffle boffins" and noted how local flying instructors had spotted it. A later very skilled and detailed investigation for BUFORA by Clive Potter and Ernie Still revealed that this was on 29 June, when the aerial photographs were taken. However, the rings were actually first seen (and not reported) by the farmer of this wheat field on either the 20 or 21 June. This was during crop spraying. It seems probable they formed on the night of 18 June 1988.

The story quickly made local television news and BUFORA tried to play it down. Clive Potter demolished the UFO theory in the Mercury (8 July) and Dr Meaden espoused his ideas. But three days later an even larger article in the same paper ('Rings of mystery') had photographs of Pat Delgado and Colin Andrews freshly arrived on the scene taking aerial photographs with a camera mounted on a long stick. Terming them "a radar expert, formerly with NASA... and an energy specialist" it describes how they allegedly recorded high radiation level pockets in the cereal and announced firmly; "This is no hoax". The fact that a Roman road was close by was said to be relevant and Colin Andrews spoke of "high energy fields" that were linked with "ley lines". Pat Delgado meanwhile repeated his party line about "an unknown force, possibly manipulated by an unknown intelligence" and was adamant that a "natural force could not create such intriguing patterns." A couple of lights in the sky seen from surrounding Leicestershire countryside were mooted in connection by the newspaper. However, any possible relevance seems defeated when it is realised that these were timed to coincide with the assumption that the circle had appeared around first discovery. Of course, this was at least a week after investigation showed that it formed.

By their issue of 13 July 1988 the Leicester Mercury was speaking of "squabbles" that "have broken out between experts investigating Leicestershire's mysterious 'corn rings'." It told how "Oxford physics graduate and weather expert, Dr Terence Meaden... lashed his fellow investigators for their unscientific methods. He said; 'They believe these circles were formed by UFOs. That is nothing but pie in the sky which is wasting a lot of people's time - although it looks good in newspapers. They have their own fantasy explanations for it and rule out all other possibilities. That is just not scientific.'"

Strong words indeed. Not surprisingly, Colin Andrews reacted to them. He commented; "The whirlwinds theory is far too simplistic. It is ridiculous to keep harping on about it. We now have the data to prove these circles are intelligently locating themselves. And there are even more bizarre facts that we dare not release. It is chilling." One of these 'chilling facts' appears to be a story later discussed by them on television that a 'top national personality' living near a circle site had watched a cast iron cattle grid levitate through the air, presumably through the agency of these unknown forces and unknown intelligences; although to what apparent purpose is far from clear.

Of course, if this event occurred then it might well be explicable in terms of a 'suction' effect created by any hypothetical wind vortex that could have been formed at the location. Whirlwinds and tornadoes are known to perform some extraordinary feats as a result of their extreme power.

Inevitably, with the battle lines drawn, the media back in Wessex took up the controversy. The Winchester Gazette & Extra (21 July) cited Terence Meaden's Oxford lecture and the Observer review and then made the incredible assertion that Pat Delgado had told them "Dr Meaden used to be in agreement with him in backing the UFO theory." This, of course, is not born out by any of the facts in this section of the booklet - although to an extent it may turn on whether by UFO you mean 'spaceship', an 'unknown, intelligently guided, force' or, simply an unidentified phenomenon. Perhaps Pat Delgado was also misquoted, as UFO investigators frequently are. Although the report does add in direct quotes, reputedly from him, saying; "We are so disgusted that he (Dr Meaden) is so adamant that the rings are caused by whirlwinds that we don't want anything to do with him." Delgado concluded that when he spoke to the meteorological office at Bracknell, in Berkshire, they "fell on the floor laughing at (Dr Meaden's) theory." If any of this is accurate reporting it hardly constitutes a fair minded consideration of the weather-based solution by any of the sources cited.

The scene was now set for two of the longest and best features on the circles phenomenon.

Firstly, a weighty article in the Sunday Observer (14 August) which was penned by Andrew Stephen as a sort of odyssey throughout Wessex. He met Professor Archie Roy (latest friend of FSR) who explained that the rings were "perfect" and "a very interesting mystery". He was then lead to Colin Andrews, introduced to his mountains of data (which were littered about his fortified shed) and told all about the team of 'scientists' that he now supervised.

A tour of circle sites and suitably perplexed witnesses left the intrepid reporter duly flabbergasted, with remarkable claims that the circles locate themselves close to ancient sites, sensitive military establishments, and so on. But then, he notes; "What I did not know at this stage was that Mr Andrews, who keeps the media informed about new circles, is an enthusiastic contributor to *Flying Saucer Review*." That sudden revelation clearly brought some discomfort to the hardened newshound.

Next he met Terence Meaden. Colin Andrews had said of the weather man that he had once been a member of his research group until "he suddenly announced that he had solved the mystery... But Meaden was most definitely wrong, Andrews had said with some vehemence, and he had moved the goal posts in the investigation. They had all fallen out with him as a result." Of course, as you will know from the past chapter, Colin Andrews is a relative newcomer to the circles field. Terence Meaden has been engrossed from the very start and did not "suddenly" announce that he had 'solved' the mystery. From Meaden's very first article in the Journal of Meteorology way back in March 1981 he had concluded that the solution lay in the province of vortices. This was, after all, his field. It was also precisely why Dr Meaden was interested in the circles in the first place.

Naturally, Terence Meaden held nothing back in replying to these bizarre charges. He told the Observer that Andrews' team were "looking for something extraordinary, possibly extra-terrestrial... They were linking the crops with reports of UFOs in the area - and coming to extraordinary conclusions."

Terence Meaden then sent Andrew Stephen to see Paul Fuller, who explained the rational BUFORA approach with voluminous reports and references. This was at the last minute, and required the copying of masses of data, with delivery to the journalist by express mail. That was the only way to ensure that he received a fair picture of the events dating back many years. Stephen was obviously impressed, having picked up no inkling of much of this by way of the carefully phrased statements given to him by some of his other interviewees. The Observer writer concluded his piece; "By now I needed no convincing about the origin of the circles. The instinct to make our lives exciting, relevant, crucial to history, is a strong one - overwhelmingly so for some."

Andrew Stephen did note his surprise at having stirred up a 'hornets nest' in British UFOlogy. He knew but the half of it and we will say no more. BUFORA supports freedom of speech and the right to disagree. We believe that readers should see the full facts, rather than those carefully selected to impute our case. Here we have tried to give you all the facts that you may need to judge this complex phenomenon for yourselves.

Unfortunately, Stephen's efforts to get comments from Colin Andrews about what the journalist had discovered later in his research went mostly unrewarded. As he puts it in his article; "I could not speak to Mr Andrews himself, because his wife had dragged him off to Ibiza."

Soon afterwards BBC television's 'Country File' screened a 25 minute documentary all about the circles which was filmed around the same time and followed similar lines. Entitled 'Running rings round Arthur' (a reference to the ancient king of Wessex) it was notable for its fair presentation of the arguments now rife, well illustrated by 'warring' Colin Andrews and Terence Meaden side by side in a field with Andrews saying; "As far as I am concerned this (ring) is intelligently located." Meaden , pointing out that many of the 'intelligent' patterns in the phenomenon are more apparent than real replied; "And I suggest it's just coincidence."

There were limitations, given just 25 minutes air time. In that period the BBC tried to cover all aspects from both sides, which resulted in a fairly superficial approach. Only a very small amount of the strong evidence that supports a natural phenomenon emerged in that way and, of course, not an inkling that the circles are far more than a localised Wessex mystery.

One of the 'circles' group associated with the FSR team replied to a question from presenter Ann Brown with the comment that they had not been fooled by any hoax. Presumably this means that, although they were quoted in the press as being sure it was NOT a hoax and took no immediate opportunity to denounce the second 1986 formation at Cheesefoot Head, they knew all along that it was fabricated. If so, the question remains as to why they did not instantly make that clear in their public statements.

Melvyn Bell, a local eye witness to a vortex creating a circle (see Chapter 6: 'The Vortex Theory') gave his killer blow description of the small swirl of debris "like a whirlwind in a shopping centre" resulting in a single circle in the Wiltshire field beneath... Game, set and match?

Of course not ! On 1 September 1988 back on the scene and now running 'The Unexplained Society', was our long lost friend Ken Rogers , formerly Chairman of the British UFO Society . He told the also long lost Daily Express that; "We have constantly maintained that the circles are 'UFO nests' or landing sites made by spacecraft visiting our planet. Scientists have been unable to disprove this." How anyone is expected to 'disprove' such a theory is hard to see, because it is non falsifiable; something hated by science. Paul Fuller wrote to the Express and to the Marlborough Times but only received cooperation from and a rebuttal published in the latter.

In 1988 one of the most remarkable new features of the circles themselves was that no fewer than THIRTEEN turned up in fields beside Silbury Hill near Wiltshire's famed Avebury stone circle . This latest twist revealed by the mystery even attracted the retired Under Secretary at a department which handles UFO data for the Ministry of Defence. He is Ralph Noyes, now a professional writer, and who is interested in the possibility that novel energy phenomena might lie behind the circles. Noyes has begun to follow the topic with great vigour and on 2 February 1989 he published a very erudite and responsible article, 'Going Round in Circles' for Country Life magazine. He has also written speculative pieces on the issue for UFO journals in North America.

However, we must conclude this history (although it will certainly NOT be an ending to the subject). An appropriate departure point is the 19 March 1989 feature in the 'Green Column' of the Sunday Express. Having a 'Green Column' is itself a sign of the times and our increasing concern for environmental issues. But what it had to say about the circles mystery represents the latest twist in this never-ending saga of claim and counter claim.

It reports how Colin Andrews had been invited to travel to Tokyo in the autumn of 1989 to address an international conference about crop circles. His research team had applied for a £50,000 grant to set up a high-tech "monitor" unit, but this was turned down flat by Nicholas Ridley, the British government's environment secretary. The team claimed this minister had for many months failed to answer letters requesting this finance to fund such 'vitally important' research. Now, Andrews reports, they are turning to the Japanese for the needed financial assistance.

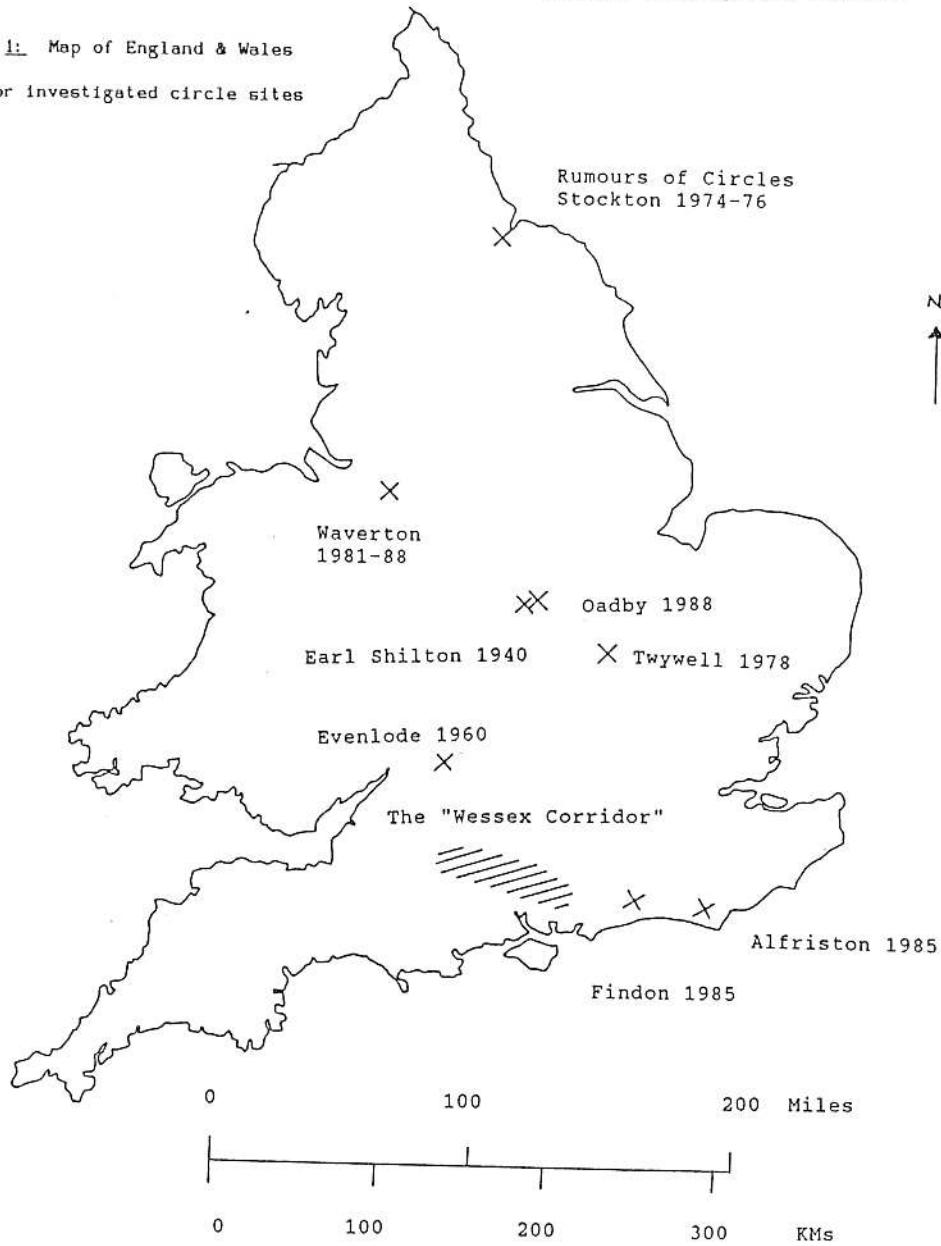
The bemused orientals had already been filmed at Cheesefoot Head by BBC TV "South Today" in December 1988 and were said to be apparently concerned about the hole in the Ozone layer recently detected above the poles. A good deal of money is being spent around the world investigating the possible climatic and environmental effects and trying to find ways to alleviate them should they come. So - UFOs, unknown force fields and whirlwinds having failed to attract, it may be that a few gentle hints about the 'Greenhouse Effect' could be successfully marshalled to do the trick. According to the Express ;"experts are blaming the hole in the Earth's ozone layer for the mystery circles which appear overnight on farmland. They believe unprecedented atmospheric conditions caused by the ozone crisis are behind the baffling phenomenon." Colin Andrews (who six days later back-tracked a little in a local Wiltshire paper and called this research nothing more than a 'possible connection') was then quoted as saying;"We now believe the shifts in the Earth's electro-magnetic conditions caused by the ozone layer hole may be responsible."

Which may, or may not, be true. But it does seem that those old fashioned theories about 'paranormal UFOs', 'ley lines' (sic) and 'invisible earth forces' may be getting just a little bit stale. Whatever else may be the case, this fascinating, endless controversy seems set to generate yet more twists and turns as the 'experts' and 'theorists' struggle with the data and with one another to see who can come up with the latest in a long line of ever more unusual ideas.

BUFORA will be watching and commenting with interest and we will continue to fight for rationality and a scientific answer, whilst at the same time not being afraid to speak out in defence of common sense.

Fig 1: Map of England & Wales

Major investigated circle sites



CHAPTER (2): THE UFOLOGIST'S PARADIGM

During the past three years I have devoted a great deal of my spare time to researching the mystery of the "cornfield circles" and I think it is fair to say that I have been in a unique position to see how the phenomenon has been treated by UFOlogists, by the Scientific Establishment and by the media. During my involvement with this phenomenon I have seen and learnt a great deal about UFOlogy and UFOlogists, and I feel it my duty to make certain constructive comments about the way in which we should be investigating anomalies in a proper, responsible manner.

All of us involved in the international UFO movement have a duty to UFOlogy to investigate anomalous phenomena in a fair, open minded and objective manner. This duty places an important obligation on UFOlogists to consider all the evidence and all hypotheses without dismissing theories and evidence simply because they do not support more exotic interpretations of the data at hand. This policy must be followed because it ensures that no UFOlogist ever discredits our subject by making unsubstantiated claims or dismissing theories which later turn out to be true. We UFOlogists have rarely presented ourselves in our best light because we have allowed ourselves to be conditioned to consider only the most exciting interpretations of our data at the expense of more mundane solutions. The effect of such bias has always been the outright dismissal of UFOlogy and UFOlogists by the Scientific Community.

As UFOlogists we all demonstrate concern that anomalies are being ignored by established scientists and we all strive to bring these anomalies to the attention of Science so that others may learn to appreciate the wonders of nature. In order to achieve this, all of us share something which is very special to us, something which few UFOlogists ever attempt to define. What we all share is a PARADIGM, a model which clearly defines What UFOlogists Study and What UFOlogists Believe. This Paradigm is very important to the UFOlogist because it defines our whole approach to the scientific study of anomalous phenomena. It has the greatest possible relevance to what should be our correct approach to the study of the cornfield circles.

UFOlogists everywhere adopt the following as the UFOlogist's Paradigm: -

1. Credible, stable witnesses are reporting anomalous observations to us in the belief that we can account for their experiences;
2. Objective investigation of these experiences leads us to believe that a high proportion of the reported events are the result of a complex process of misperception (which, of course, constitutes a quite valid field of study in its own right);
3. Only a very small proportion of reported anomalous experiences seem to have a relatively high probability of remaining unexplained by current scientific knowledge after objective investigation;

4. These latter reports may represent observations of unrecognised phenomena (Hynek termed these 'Novel New Phenomena'; another suggestion has been the slightly more presumptive term UAP - *Unidentified Atmospheric Phenomena* - which appears most relevant to cases where natural phenomena are implied);

5. It is the UFOlogist's Duty to objectively record and evaluate these phenomena so that Scientific Knowledge will be improved and extended beyond its current bounds.

It is important to stress that the UFOlogist's Paradigm makes no promises about the types of stimuli which may lie behind anomalous phenomena, it simply entertains the possibility that some of our reports may be inexplicable by current Scientific Knowledge. It is also important to emphasise that although UFOlogists everywhere frequently give the impression that these unrecognised phenomena simply must represent exotic, sensational phenomena, the chances are high that this is not the case. These unexplained phenomena may well eventually prove to be just as mundane as the explicable phenomena already being eliminated by a UFOlogist during every day of their working life as a case investigator.

What is so implicit in the UFOlogist's Paradigm is that the correct attitude to the study of anomalous phenomena must be to adopt a sceptical and questioning approach to anomalies because such an approach actually strengthens our claim that there are unrecognised phenomena in the UFO data. The advantages of this more sceptical approach are that it :-

- (1) ensures that UFOlogists never allow truly identifiable anomalies to be presented to science as "unexplained", because if this were to occur, scientists would be all-too-willing to discard all our data and they could legitimately claim that UFOlogists were incompetent and biased;
- (2) UFOlogists would be more confident that our unexplained reports really did represent unrecognised phenomena because disguised IFOs and dubious cases would be less likely to slip through the net to distort and mask the truly anomalous reports which occasionally come to our attention; and
- (3) UFOlogists should have an easier task demonstrating their premise that the UFOs and the IFOs are really intrinsically different from each other by the application of established scientific procedures.

For these reasons, all of us have a very real duty to UFOlogy to adopt a sceptical, questioning approach to the analysis of the UFO data. By being sceptical, UFOlogists are strengthening the value of the data we collect and we are protecting the credibility of our subject from further attack and dismissal by responsible critics. Such dismissal would be both understandable and reasonable if UFOlogists constantly labelled as 'unknowns' those reports which they ought to be capable of explaining through careful investigation.

It is important to emphasise that UFOlogists who adopt a more sceptical approach are not to be confused with debunkers, because these people reject anomalies out-of-hand for purely psychological motives.

Sceptical UFOlogists often seem to be disguised debunkers because both debunkers and Sceptical UFOlogists attempt to find explanations for anomalous events. However, Sceptical UFOlogists still suspect (and often accept) that there are Novel New Phenomena behind some of the UFO data. The attempts of such researchers to find solutions to anomalous observations merely aims to ensure that UFOlogists never make the mistake made by so many discredited predecessors, who accepted the most sensational of claims without the slightest doubt or criticism.

Regretfully, for every Sceptical UFOlogist there are too many people who are also involved in our movement, claiming to be UFOlogists, and who seem to believe that every UFO report must represent something utterly exciting and sensational to the exclusion of all other possibilities. The result of such vociferous enthusiasm has always been the continuing dismissal of UFOlogy and UFOlogists by the Scientific Establishment and the continuing failure by UFOlogists to persuade a rightly sceptical world to recognise the anomalies which still come to our attention.

How many times have we seen UFOlogists promote the most dubious of cases only to cause untold damage to themselves and the subject when a more probable or mundane solution to the case emerges? Once there were "UFOlogists" who enthusiastically believed the claim that Stack Rocks off the coast of South Wales was a base for (intelligently controlled) UFOs which had been seen entering and leaving the underwater hangars via huge metallic doors hidden in the rock face. Once there were many more who accepted (without question) the word of a contactee saying that he had flown in a UFO to see the trees and rivers on the moon. Even in the 1980's this pattern continues with a best-selling book which has told the story of a new guru of UFOlogy. An unassuming man who has photographed dozens of crude looking "UFOs" and who has been transported in time by his alien chums to meet Jesus and film fuzzy scenes of 'San Francisco after the next earthquake' and even wilder esoteric nonsense such as "God's Eye".

This may sound twee and rather amusing. However, to the serious media and the scientific community it reflects what they perceive to be the awful truth about UFOlogy. Needless to say, such an erroneous impression effectively destroys the chances of our field gaining scientific respect. The ONLY solution to this dilemma is for UFOlogists to become more outspoken against the unfettered myth-makers within their midst.

Following on from this, let us turn to the issue of the cornfield circles and let us consider the possibilities and probabilities of this fascinating and undoubtedly challenging phenomenon.

To begin with, it is simply not permissible to attempt to account for anomalous phenomena by reference to other, unexplained or controversial phenomena (eg "Ley Lines", the hole in the ozone layer, UFOs, etc). The reason for this is because anomalous phenomena are explained by matching characteristics of known, verifiable phenomena with reliable, representative characteristics of the anomaly. For this reason our approach to the enigma of the circles must be to attempt at the outset to account for them by reference to known, well-understood phenomena before we even begin to contemplate explanations which rely upon unproven, unverified anomalies like UFOs and "Ley Lines".

Our attempted explanations need to be falseifiable - ie they must be capable of being disproved by hard evidence - so how can we disprove that "Ley Lines" and UFOs are creating the circles when we cannot define such things or their characteristics ? Until the U in Unidentified becomes an I (for Identified) there is simply no way we can use characteristics of UFOs to predict characteristics of circles.

A good example of this methodology is the theory of plate tectonics, or continental drift. For many years people had noticed the remarkable coincidence in the shape and positioning of the West African coastline and that of north east Brazil. Could it be, they mused, that many years ago Africa and South America were joined along a common boundary and that some currently unknown process had caused the two continents to drift apart whilst maintaining the similarities in their shape and position.

In this example, the anomaly is obvious - the similarity in shape and orientation between two continents. The theory that entire continents rest on large "plates" drifting slowly across the earths surface due to rising convection currents within the earths crust, was only demonstrated when it was shown that the geological features on both continents could be matched in sequence and that flora and fauna on both continents seem to have a common historical source. When first mooted, many scientists were as rightly cautious of the then unsupported proposition as they are now of most UFO theories.

In this example, characteristics of continental geology and characteristics of the biological characteristics of both continents were matched. This is the way the Scientific Method works, and this is why it is wrong to claim that UFOs are creating the circles without that elusive (but essential) 'hard' evidence.

Later in this report we present conclusive evidence that some circle formations are proven hoaxes. This fact immediately suggests that all the circles could be hoaxes too, but for this to be so we would need to demonstrate that all circle formations display all those characteristics capable of being replicated by hoaxing. It would be utterly foolhardy for us not to consider this option as an explanation for the circles before any other consideration is brought up, because of the dangers described above in the UFOlogist's Paradigm.

However, we can only accept that all the circles are hoaxes if we can replicate all (or nearly all) the circles' characteristics described in Chapter 3 of this report. If we can only replicate some of these characteristics, the Hoax Theory may only account for some circle formations - and even then it is still possible that all the circles could still be elaborate (very clever) hoaxes, and we must not be so blind as to ignore this possibility simply because we cannot currently replicate the more intangible characteristics of the phenomenon. We would only reject the hoax theory if and when an alternative theory successfully accounts for a higher proportion of the circles' characteristics than those resolved by the former (hoax) theory.

Turning to other possibilities, some UFOlogists have publicly claimed that (seemingly invisible and intelligently controlled) UFOs are creating circles, and they cite eye witness accounts of UFOs appearing at circle sites as evidence of this claim. Again, because we consider ourselves to be open minded, objective UFOlogists we are perfectly happy to at least consider the possibility that "intelligently controlled" ("paranormal") UFOs are creating the circles, and we recognise the right of these UFOlogists to discuss this concept in the literature if they truly feel that the available evidence merits such consideration.

If these UFOlogists are right, we will be happy to accept this fact - *once it is proven beyond reasonable doubt by reliable evidence*. We acknowledge that such a revelation, stating that "intelligently controlled" UFOs are creating the cornfield circles, would be one of the greatest scientific discoveries of all time. But, because of its extraordinary nature, it requires extraordinary levels of evidence in its support. Supposition, inference and speculative guesswork will NOT suffice, when other rational theories persist.

Criteria Required to Prove that UFOs are Creating Cornfield Circles

To prove that "intelligently controlled" UFOs are creating the cornfield circles, UFOlogists need to demonstrate the following characteristics of a carefully defined (random) sample of known circle formations (eg all those circle formations appearing in the UK during the past five years): -

1. That all circles used in the analysis were genuine (but not hoaxed) circle formations with identical or near identical characteristics;
2. That all UFO reports associated with these circles were genuine bona fide observations of unexplained phenomena for which no relevant data was missing, which had all been properly investigated by experienced open-minded investigators and for which no reasonable alternative explanations could not be proffered from the realms of conventional science;
3. That a significantly high proportion of the sampled cornfield circles were associated with such UFO reports that were occurring at the same time and same location as a circle was actually appearing or being formed during the unexplained UFO event.

We maintain that it would NOT be sufficient for UFO sightings to occur days or weeks before or after a circle was discovered, or for the UFO sighting to occur some distance away from the circle formation (eg more than say 500 metres) because under these circumstances there would be no clear suggestion of a causal relationship between the unexplained UFO event and the actual formation of the cornfield circle.

It is also important to remember that a very high proportion of reported UFO events have prosaic explanations, and that in central Southern England - where many of the well publicised circles are appearing - there are a number of high-tech military establishments which may well be happy to allow the UFO Myth to cover up the testing of restricted military equipment (eg Remotely Piloted Vehicles).

I have personally investigated at least one UFO report in which the available evidence tends to suggest that this kind of subterfuge is occurring, and I believe that the familiarity with such devices displayed by Lt Col Edgecombe, based at the Army Air Station at Middle Wallop in Hampshire, suggests that such tests are definitely occurring in this part of Britain. The existence of several firms known to manufacture such devices (eg Flight Refuelling at Wimborne in Dorset) reinforces this possibility.

With these factors in mind, it is simply not permissible for UFOlogists to present accounts of UFOs seen in the general area where circles have been appearing and then not make the slightest attempt to try to account for those reports through some stimulus which is unconnected with the circles (whatever the causation of the circles may be). These UFOlogists seem to be quite unaware that careful investigators have already proven that most UFO reports have prosaic explanations, and their enthusiasm seems to be getting the better of them.

BUFORA, for example, adopts the following principles during a field investigation :-

1. That between 90 and 95 % of reported UFO sightings turn out upon careful evaluation to be *identifiable* in mundane terms.
2. As a consequence, the case should be investigated under the *premise* that it will *probably* be reduced to the status of an *IFO* at some future stage.
3. In conducting this analysis all 'Accredited Investigators' should establish relevant contacts with airports, weather centres, astronomical bodies, etc, which may offer data that would either support or detract from any feasible mundane solution to that particular case.
4. According to a 'Code of Practice', to which all BUFORA members are wedded upon approval of their status, no 'unsupported statements' about a case should be made in public prior to such analysis, or any further follow-up of the case that might be necessary, via the team of independent but associated 'experts', which include doctors, scientists, photographic analysts and psychologists.

Unfortunately, not all "UFOlogists" or UFO groups adopt such principles and the result can be correlation of one unexplained phenomenon with another on what can at best be termed a premature basis.

For example, even if it could be shown that there was a statistical association between genuine (non hoaxed) circle formations and genuine, bona fide observations of "real" unidentified flying objects (TRUFOs), this would still not mean that "intelligently controlled" UFOs were creating circles, because reports of "genuine" unidentified flying objects are not necessarily intelligently controlled UFOs. Much evidence suggests that unexplained UFO sightings could simply be reports of phenomena with a mundane (although novel) origin.

It is very important to understand that the discovery of a statistical relationship between genuine circle formations and observations of "real" UFOs would not necessarily imply a CAUSAL RELATIONSHIP between circles and UFOs. Instead, UFOlogists would then be faced with four possibilities:-

1. "Real" UFOs could be creating circles;
2. Circles could be creating "real" UFOs;
3. A third, unrecognised phenomenon could be resulting in observations of both the "real" UFOs and the circles (even if these are not directly connected with one another); or
4. The statistically significant result had arisen purely by chance factors (eg if the sample was biased, and/or if the sample size was very low).

This model is known as the Scientific Method.

The Evidence for the UFO Theory

We have dealt with the evidence for this theory in Chapter 5 of this report and readers will note that the evidence for such a theory is in many ways sadly lacking. However, regardless of the strengths or weaknesses of the UFO theory it seems patently obvious that after four decades of failure or ineptitude the very last thing UFOlogists should be doing at this point is to openly allege that these circles have an exotic, sensational cause. Do these people not realise that the credibility of UFOlogy is littered with the debris from similar false claims and red herrings ?

UFOlogists need to learn to be much more realistic about the types of theories necessary to account for the wide variety of anomalies being reported to us, and UFOlogists must learn that UFOlogy is not some kind of game where participants choose the most exciting, exotic explanations which they can conjure up to fit the data at hand. UFOlogy is an embryonic Science, and its participants have duties and responsibilities towards the advancement of our knowledge and the promotion of our data in a responsible, mature manner.

UFOlogists know from more than forty years of experience that most UFO reports have relatively mundane explanations, it therefore must follow that the cornfield circles may also have a fairly mundane explanation, even though at first glance the phenomenon seems to be everything UFOlogists have been conditioned to expect from a more exotic causal mechanism.

Following on from this, when qualified scientists suggest a mundane explanation, UFOlogists have a responsibility to treat it with as much respect as they would more exotic theories. Although, of course, it is but human nature to entertain the more exotic theories at the expense of all others. UFOlogists cannot be expected to be familiar with all existing scientific knowledge, therefore we have no right at all to dismiss theories until we have at least allowed those theories some opportunity to be evaluated and discussed by those best qualified to consider the available evidence in an open minded manner.

UFOlogists must be seen to be respectors of existing scientific knowledge when debating anomalies, and they must accept that the opinions of respected scientists totally outweigh all other considerations when debating theories about anomalous events. It is simply not permissible for UFOlogists to dismiss the opinions of respected scientists simply because some of them prefer (or long for) other, more sensational explanations for our data.

In Chapter 6 of this report, we have described in some detail the case for a meteorological explanation for the cornfield circles and we accept that, at first glance, the Vortex Theory seems to be somewhat ridiculous and utterly without merit. We accept that many of our colleagues in the United States will find it almost impossible to accept that natural atmospheric vortices are capable of creating cornfield circles, and I must confess that I too found the idea highly amusing when I first heard that somebody had suggested that such complex, geometrically-defined features could be caused by a natural phenomenon.

It took me more than two years to come to appreciate the strengths and weaknesses of the theory and to promote its acceptance in the UFO literature.

What is so very important to the continuing development of UFOlogy is that we all allow meteorologists the full opportunity to debate the Vortex Theory in a responsible manner. We cannot afford to dismiss this "ridiculous" theory out-of-hand before the professionals in the field reach an informed and reasoned conclusion about its viability. It goes without saying that it would be personal folly and a disaster for the image of the UFO Movement if any UFOlogist were to publicly rebuke the Vortex Theory only for it to be accepted and proven beyond any reasonable scientific doubt.

For the future of the movement, we appeal to our colleagues to consider the evidence and the reasoning that lies behind this possibility and to ponder the damage they could do if their more exciting interpretation of these events turns out to be false. That is especially true, if it is superceded in the eyes of science by what may well prove to be a novel scientific phenomenon going on beneath the noses of the UFO subject. The irony is that UFOlogists would have missed this breakthrough whilst they preferred to ridicule those doing first-class research and chose instead to preach unprovable and exotic interpretations.

We make no presumptions on that score, but we do feel that the evidence deserves a hearing in a fair and objective manner. Only history will be the judge of who was right, and who was wrong ...

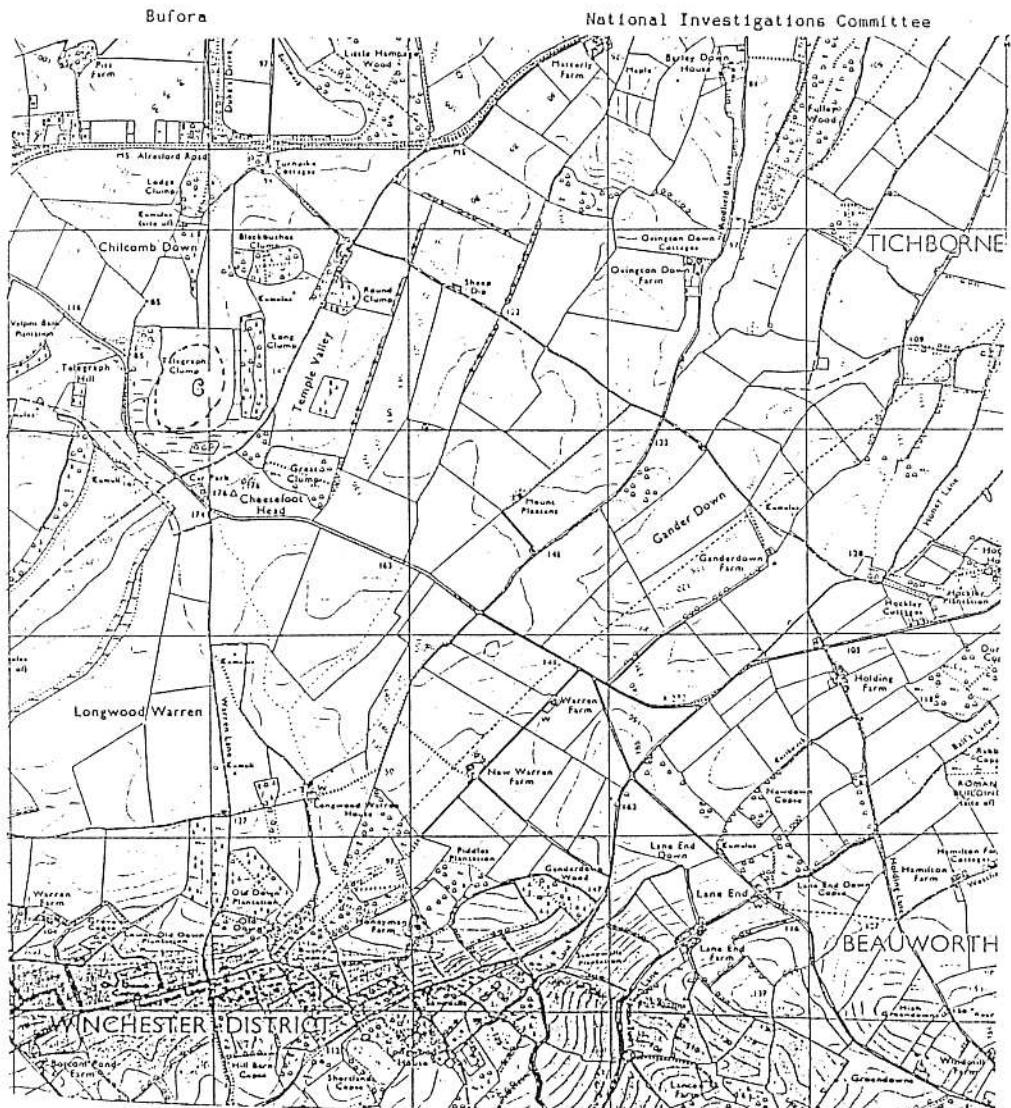


Fig 2: Winchester / Cheesefoot Head area

Ordnance Survey Map scale 1: 25000 or 4 cms = 1 km

Reproduced with permission

- 38 -

Circles appear here

6

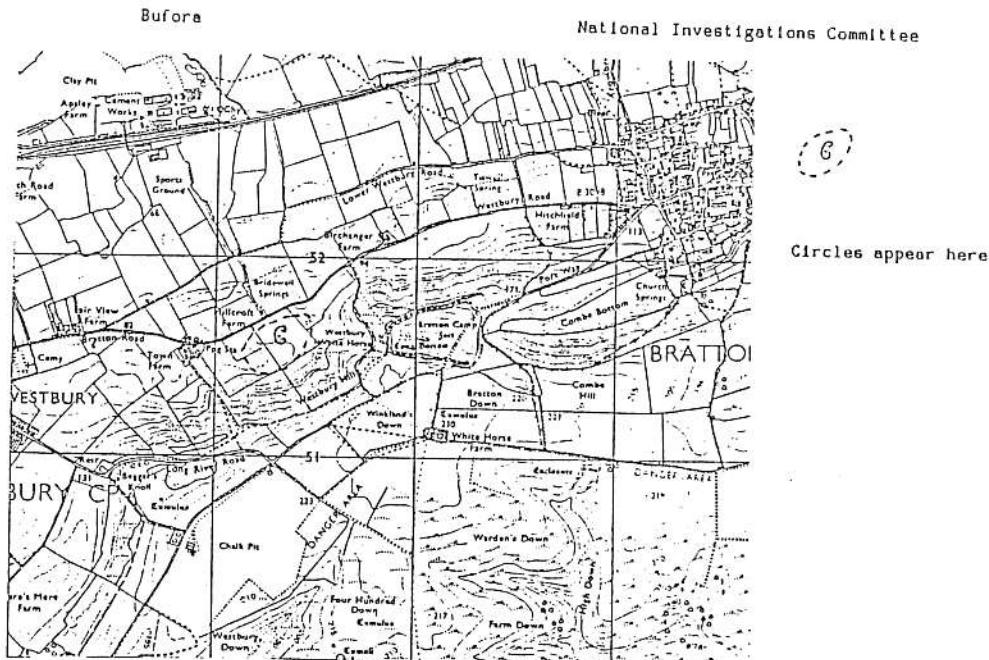


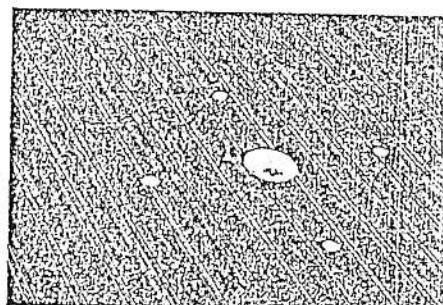
Fig 3: Westbury / Bratton area

Ordnance Survey Map scale 1: 25000
or 4 cm = 1 km

Reproduced with permission

A typical quintuplet circle set, showing the extraordinary regularity of pattern

(Photo: Dr Terence Meaden)



CHAPTER (3): THE CIRCLES CHARACTERISTICS

The "cornfield circles" are strikingly beautiful, evocative features of the rural landscape, which at first glance seem to be wholly artificial in origin. Their unexpected appearance and complexity immediately provoke thoughts that an intelligence (even an "alien" intelligence) must lie behind them and it has been no surprise that the phenomenon has attracted a number of sensational, wildly exotic explanations for their existence. Mere forces of nature seem totally inadequate to account for the dramatic impact that these circles have on the public at large. However, when properly examined, the cornfield circles (which, as you will see, are neither perfect circles nor confined to cornfields) offer a multitude of clues that suggest several less sensational explanations for their origin.

It should be remembered that if we were studying ordinary snowflakes, we might believe that these too have been formed by some kind of "intelligence", because like circles, snowflakes also display intricate, geometrical characteristics. However, what seems to be evidence of an "intelligence" to the naked eye is not necessarily implicit within the scientific data, once more mundane explanations for such patterns are sought.

We list the circle's characteristics in three groups:- characteristics of the affected zone, characteristics of the circles geometry, and characteristics of the sighting locations. These findings are based upon the very extensive investigation of several hundred circle sets during the past decade by a number of researchers. They take account of the more common features and the occasional atypical factor which has appeared from time to time (eg the linear spurs). They also relate to the overall morphology of the circles, which has included single circles, ringed patterns, and more complex multiple circular alignments - some of which are illustrated in Figure 4 (page 48). Some circles have now been carefully examined within a very short time (just a few hours, in some instances) of their known formation, it is therefore reasonably certain that the features in this summary are genuine aspects of the circle phenomenon, rather than subsequent effects caused by people examining the circles *in situ*.

Previously unreported patterns have come to notice as recently as the summer of 1988 and it seems perfectly feasible that more patterns may exist and will be reported in the future. The data which comprise the following survey include all sets known to both the UFOlogical and meteorological communities prior to the 1989 summer 'season' and include information from a number of sets researched in other geographical regions and foreign countries.

A. Characteristics of the Affected Zones1. Precise Definition

In all formations the affected zones are very precisely defined, ie there is no gradation between the affected and unaffected crop, the cutoff is sudden.

This characteristic automatically excludes helicopter downwash as the causing mechanism because rotor-caused downwash spreads out radially in all directions and cannot end abruptly. This fact was established by Lt Col Edgecombe of the Aviation Standards Branch, Middle Wallop Army Air Station, Hampshire (whose professional duties involve the assessment of helicopter-caused damage to arable crops for insurance claims) and was also later verified beyond all reasonable doubt by an experiment (first suggested by BUFORA) in the BBC TV programme 'Country File' (screened on 9 October 1988). In this important test a low hovering Wessex Helicopter failed to reproduce any of the effects displayed by the cornfield circles.

2. Swirl Pattern

The affected crop is laid down in a highly distinctive swirl pattern which emanates out from a spiral centre which is usually offset from the geometrical centre of the affected zone. This swirl pattern consists of banded crop stems laid out in a radial pattern which is strongly suggestive of a rotating causal mechanism. This suspicion is reinforced by the manner in which stems are heaped up against the outer circumference of the zone in a more or less cyclic manner, whilst small tangential spurts into the surrounding (unaffected) crop are occasionally visible in aerial photographs. Occasionally, some circles display two spiral centres - usually less than a metre apart - and neither lying exactly at the centre of the affected zone. In addition, some circles display what has been described as a "starburst effect" whereby the spiral effect is restricted to only the outer circumference of the affected zone.

3. Direction of Spin

Contrary to some reports, there seems to be no strong bias towards any particular spin direction for the swirl pattern. During 1987 Dr Meaden of the Tornado & Storm Research Organisation (TORRO) visited 66 circles (in various formations) and discovered that of these 30 circles (45 %) displayed clockwise swirls whilst 36 (55 %) displayed anti-clockwise swirls. During 1988, of 91 inspected circles 56 (62 %) displayed clockwise spirals whilst 35 (38 %) displayed anti-clockwise spirals.

In the more complex circle formations, there seems to be no rule governing the direction of spin in the outer satellites, these can swirl in either direction regardless of the swirl displayed by the parent (central) circle. For example, the 1988 Beckhampton quintuplet displayed clockwise swirls in both the central circle and three of the outer satellites, whilst the remaining satellite displayed an anti-clockwise swirl. Furthermore, several formations have displayed contra-rotations within the same (parent) circle, eg the 1986 Headbourne Worthy formation displayed two zones of anti-clockwise swirls, one inner zone swirling outwards from the spiral centre, whilst the outer zone swirled inwards towards the centre. The first 1986 ringed circle at Cheesefoot Head displayed a central clockwise region with an anti-clockwise band within the same parent circle. The outer ring also rotated in an anti-clockwise manner.

Although there seems to be no rule governing the spin direction in the more complex circle patterns, circles with outer rings always contra-rotate with each other and the central (parent) circle.

For example, the 1988 Cheesefoot Head double ringed single displayed a clockwise swirl in the inner circle, followed by an anti-clockwise swirl in the inner ring, then a clockwise swirl in the outermost ring.

Some circle formations display very thin outer rings which are almost invisible except from the air. These outer rings are only a few centimeters thick and usually pass through the outer satellites of the more complex formations (FSR Vol 29 No 1 p 15 has a good photo). Sometimes, this effect is so thin that it appears to only pass through two or three of the outer circles (eg in the August 1987 quintuplet at Cheesefoot Head), although this may also reflect minor variations in topography.

4. The Existence of Banding

Inspection of the affected zone reveals that the groups of stems have been compressed together to form identifiable "ribs" or "whirls" as if the spiral had been created by forcing a giant comb with unevenly placed teeth through the crop. No known method of hoaxing can convincingly recreate this important characteristic.

5. The Existence of Distinctive Layering

Further examination of the affected zone reveals that the crop is often (but not always) laid down in distinctive layers which tend to point in different, highly divergent directions. For example, the 1987 Pepperbox Hill formation displayed three such layers with the maximum angle of divergence nearing 160 degrees. No active researcher has been able to reproduce this layering with the aid of chains, ropes or by any other means and the existence of layering poses a primary argument against the hoax theory.

6. The Lack of Damage to the Crop Itself

Surprisingly, there is normally little or no damage to the affected crop, the stems are simply sharply kinked just above the ground surface and the rest of the stem is either bent gently, or more often very firmly, against the ground surface as if the crop had been pushed down from above. The heads and stems of the affected crop are nearly always fully intact, there is rarely damage to the crop itself. However, on some occasions - eg in the 1986 Littleton single - up to 5 % of the crop stems had been snapped off. This may well have been due to visitors trampling across this well-publicised site due to its close proximity to a major road and nearby housing estate.

Extensive experimentation has demonstrated beyond all reasonable doubt that mechanical depression (eg by using a heavy chain or rope) always damages the crop and its effects can be recognised very easily.

7. The Lack of Damage to the Surrounding Crop

It is important to recognise that the surrounding crop is totally unaffected by the causing agent, there is no indication whatsoever of interference by humans (eg footprints).

Photographs taken immediately on discovery show no signs of tracks between the cornfield circles and adjacent tram lines (the marks left by tractors at sowing). Circles appearing away from the tramlines show no connecting tracks between the affected areas and the tram line as would be expected by someone walking through the crop at night.

Attempts to walk through mature arable crops during daylight always leave very obvious damage to the closely packed crop whilst attempts to walk through crops during the night (even along the tramlines) inevitably leave even more damage to the surrounding crop. Some circles have even appeared during heavy precipitation (eg Cheesefoot Head 1986 No 1) yet no footprints were apparent in the saturated field within an hour of discovery (ie 4 am).

8. Type of Crop

Although most of the circle formations have been discovered in mature, near ripe cereals (particularly in wheat and barley), it seems that virtually any arable crop can record the presence of the causing agent, provided the stems are of sufficient pliability to permanently deform. Dr Meaden's collection of circle formations include circles in wheat, barley, rye, oats, oilseed rape, mustard, runner beans, soya beans, grass, spinach, tobacco, sugarbeet, maize, rice, sand, dirt and snow. Circles have been discovered in long grass (eg Twywell 1977) but these circles are quickly blown out by ordinary wind currents. Circles have also been reported in savanna and swampland (eg the Tully, Australia case), but it is not always clear whether these circles are identical to those being discovered in Southern England, and in some instances other causes are locally suspected.

The implication behind the wide variety of crops and vegetations known to have had circle-type phenomena is that a mechanism exists which normally goes un-noticed except when mature arable crop or some other agent is present to permanently record the presence of the causal mechanism. This has important implications for the extent and nature of the temporal and geographical distribution of circle formations (see Chapter 6).

B. Characteristics of the Circles Geometry

1. Shape

One common misperception about the circle formations is the belief that each formation represents a perfectly spherical circle. This is not so, the majority of formations display noticeable eccentricity and seem to approximate ellipsoids. A typical circle displays a shortest to longest diameter ratio of approximately 0.9, but it will be interesting to examine the distribution of this ratio when Dr Meaden publishes his theory in full. This characteristic seems to rule out pole and chain method of hoaxing (see Chapter 4), as the use of a central pivot would, through the results of geometry and mathematics, automatically produce a perfectly circular zone of crushed corn (as well as a central hole). However, whilst it is possible that perfectly spherical circles could be caused by pole and chain hoaxing, there are many other reasons why we still reject hoaxing even for these circles, which we will discuss later on in this report.

2. Size

A wide variety of circles of all sizes have been discovered, ranging from mini circles only a metre or so in diameter to circles with diameters of well over 20 metres or so. The largest formations measure up to 45 metres in diameter whilst individual circles are normally of the order of 10-20 metres diameter. The sheer size of the circle formations tends to argue against the possibility that the circles are all hoaxes.

3. The Large Variety of Different Formation Types

Increased searching by a number of researchers during the past eight years has resulted in the discovery of nearly 20 different formation types, of which 13 are detailed in Figure 4 (page 48). It is difficult to determine how many formation types exist because sometimes formations appear on the edge of fields and the existence of outer satellites has to be inferred. Furthermore, no account has been taken of variations in the dimensions between the different component parts of each formation and no attempt has been made to account for the varieties of spin direction or the existence of contra-rotations within the same circle.

Every summer researchers are discovering new formations. For example, a survey of only 90 cereal farms produced accounts of two previously unknown formation types (a regular quadruplet and a triangular triplet) from only 11 respondents reporting formations (see Chapter 7). In retrospect it seems quite evident that these 'new' patterns have in fact been occurring for many years, but until recently their existence has not necessarily lead to reporting. The implication behind this is that there may well be further formations awaiting discovery and that the phenomenon of the cropfield circles is probably more common than was first believed, whilst still essentially rare.

The existence of so many different formation types suggests that a single very complex causal mechanism may be a less realistic explanation for the phenomenon than several similar causal mechanisms.

4. The Existence of Measureable Differences between the Different Components of each Formation

Contrary to popular opinion, there are identifiable differences in the dimensions of individual circles (eg between the outer satellites in the quintuplet formations), whilst the *positioning* of each component is not precise (eg in the positioning of the outer rings about their parent circles).

5. Time of Discovery

Many of the circle formations seem to appear during the night, ie during hours of darkness. This conclusion is based upon the fact that most formations are discovered early in the morning by local landowners and farmers, but no circle was present at the location late the previous evening. This characteristic suggests that hoaxing is a plausible explanation for the phenomenon, although it does not necessarily imply that all circles could be the result of such hoaxing. Daylight circles are known.

However, with the exception of the (hoaxed) Cheesefoot Head 1986 No 2 formation, the Arthur Shuttlewood incident (1970s), the Barnes (Westbury July 1982) observations and the Melvyn Bell (1987) eye witness account of an actual circle formation, relatively few circles have been shown to have appeared during daylight hours; although many circles are, of course, untimed.

C. Characteristics of the Circles Locations

1. Topographical Location

Although circles appear in a variety of topographical locations, clusters of circles have appeared for several years at two sites in particular in the South of England, at the Cheesefoot Head 'punchbowl' (a large natural amphitheatre) near Winchester in Hampshire and at the Westbury White Horse near Bratton in Wiltshire. Figures 2 and 3 illustrate the steep topography at both locations, with contours drawn at 5 metre (15 foot) intervals. Cheesefoot Head (pronounced *Chez Foot*) is flanked by steep inclines some 50 metres high for all its southern perimeter, whilst the Bratton site lies at the base of a major north facing 75 metre high escarpment on the edge of Salisbury Plain (a restricted area used by the military for major training exercises).

Both sites are major tourist attractions with good views of the surrounding countryside, conveniently sited public car parks and a network of nearby footpaths. At Cheesefoot Head the busy A 272 road passes along the top of the southern perimeter of the punchbowl (where there is a convenient sited layby). When circles appear, passing motorists slow down by the dozen to gaze in awe across the huge field beneath them where the famous circles appear.

Both Cheesefoot and Westbury are sites with long established traditions. Both sites have ancient devil names, which may suggest that unusual occurrences have taken place at both these sites since ancient times. At Westbury, the giant White Horse carved into the chalk commemorates King Alfred's victory over the Danes at the Battle of Ethandun in AD 878. At Cheesefoot, Eisenhower addressed thousands of allied troops in the Cheesefoot Head "punchbowl" prior to the D-Day Normandy landings.

It is possible that these factors suggest that hoaxing could be a realistic explanation for at least some of the circles appearing at these locations in modern times, particularly as nearly every year those circles appearing at Cheesefoot (and to a lesser extent at Westbury) receive far more media attention than circles appearing at other, more isolated locations across Southern England.

2. International Distribution

Accounts of similar (but not necessarily identical) circles originate from at least 12 countries other than Britain, including the United States of America, Canada, Brazil, Argentina, New Zealand, Australia, Tasmania, Japan, Italy, Switzerland, Austria and France.

In 1982, G.H.J. Van der Veldt published a study of alleged "UFO Nests" in the second annual of the Dutch UFO Group NOBOVO (Nederlands Onderzoek Bureau voor Ongeïdentificeerde Vliegende Objekten!). This list contained 31 circles reported from the USA (New Jersey, New Hampshire, Pennsylvania and California), Canada, Australia, Brazil and England, dating back to September 1954. The phenomenon seems to be widespread, if not very common.

Many alleged "UFO Nests" are shallow depressions in the ground rather than formed out of crushed crop and we would recommend caution in ascribing all (or even most) of these cases to identical causes with those being considered for the majority of circles in this report. On the other hand, there are enough superficial comparisons to make their study relevant and reasonable explanations can be postulated as to why the effect could have altered its manifestation since circa 1980. These have nothing to do with changes to the invasion plan from some invisible spaceships - as the more exotic theorists might suggest! Nonetheless the factor requires an answer. More plausibly there have been changes in farming methods which could have effected the way in which natural atmospheric processes would leave a permanent record of their handiwork on the earth. Meaden also discusses this issue in his book "The Circles Effect and its Mysteries".

3. The Red Herring

It is not true - as some researchers have claimed - that cornfield circles only appear in a specific part of Southern England, along the so-called "Wessex Corridor". We have several well documented accounts of apparently identical phenomena appearing at locations well away from this part of Southern England (refer back to figure 1); in particular we know of

- a ringed circle at Castions di Zoppola, Italy (August 1985), a photograph is reproduced in BUFORA's book "Phenomenon" (Futura 1988);
- the Oadby, Leicestershire formation, discovered in a wheat field during the third week of June 1988, and subject to a first class case report by Clive Potter and Ernie Still for BUFORA. This formation lay over 100 miles from the "Wessex Corridor";
- a double ringed single circle, discovered in long grass at Twywell, Northamptonshire in September 1977 (about 80 miles from the "corridor"). This formation was reported in the local newspaper at the time and then "rediscovered" and investigated by Ernie Still for BUFORA in 1988 (who traced the witnesses and obtained detailed descriptions);
- two single circles, observed in a field of long grass or wheat near Malton, North Yorkshire, next to the A64, on 18th July 1985 by Edna Randles;
- a double ringed circle discovered in a field of grass at Evenlode, Gloucestershire (1960) - discussed elsewhere in this report;
- a ringed circle observed by Mark Stenhoff and a colleague, near Bishopstrow, Wiltshire (1969);

- the circles discovered on several occasions in the 1980's at two adjacent sites in fields near Waverton, south of Chester in Cheshire. BUFORA investigators have spoken with eye-witnesses (who were unaware of the "Wessex" circles until 1988) and hope to conduct a full investigation should the circles reappear in 1989 or subsequent years.

- we also know of "rumours" of circles in North Yorkshire (200 miles from the alleged "corridor") appearing during 1974-76 (perhaps readers might like to try and track these newspaper accounts down?).

We believe that the "Wessex Corridor" is a product of the following factors:-

(1) the high concentration of arable crops capable of producing circles across Southern England;

(2) the high concentration of researchers searching for circles in the Wessex area, when they should be searching with equal effort in other adjacent areas (where circles are also appearing); and

(3) the close proximity of the national press (based in London) to the (well publicised) Wessex locations. This is illustrated by the total lack of any national media attention given to the 1988 Leicestershire circles, despite widespread local media interest and the fact that a previously unreported formation was involved.

Readers of Meaden's book "The Circles Effect and its Mysteries" will discover a map of all known locations from where circles have been reported in England and Wales. The map clearly demonstrates that the so-called "Wessex Corridor" is simply an artificial concept produced by these factors and the need to manufacture a promotable legend to create the myth that an "intelligence" lies behind the phenomenon. For the British media and many mystery-lovers - including some sections of the UFO community - the promotion of the non-existent "Wessex Corridor" reveals a very powerful vested interest in the creation of a certain mythology surrounding the phenomenon. Demonstrating that the circles are NOT confined to just one small part of England is a major step in their demystification and, in some quarters, that does not seem to be what is required !

4. The Earliest Reported Circles

Extensive research by Colin Andrews and Pat Delgado has produced anecdotal accounts of circle formations dating back to the 1940's in the UK, whilst Meaden describes accounts of a single circle in a field of beans or oats from Kent (1918) and a circle from Aberystwyth, Wales (1936). Of course, if the circles are created by some 'natural' process, accounts of identical circles should be discovered with some ease dating back many centuries and from many nations. The apparent absence of such reports requires detailed consideration, which we have discussed in some depth in Chapter 6 of this report.

5. Reporting

According to the BUFORA/TORRO Sample Survey (Chapter 7) only about 10 per cent of circle formations are being reported (and presumably an even lower proportion actually receive media publicity). This suggests that many hundreds of formations are appearing in isolated rural locations in addition to those being reported in the press, on TV or to the Tornado & Storm Research Organisation. Landowners are particularly prone not to report circles because of the fear of an invasion by researchers, the media, and members of the public, thus causing additional damage to their crops. These factors make our task of evaluating the phenomenon much more difficult because, almost inevitably, the media has a vested interest in promoting a sensational interpretation of the phenomenon, with the consequence that only the more spectacular formations or those appearing at the more well known circle sites seem to receive extensive media attention.

Fig 4: The fourteen main circle formations reported prior to summer 1989

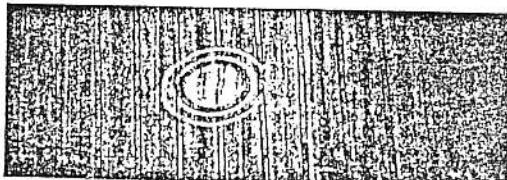
- Single Circles (the most frequently reported occurrence)
- ● Double Circles (one circle is normally much larger than the other)
- ● ● Linear Triplets (the central circle is normally larger than the two outliers)
- ● Triangular Triplets (one circle is normally much larger than the others)
- ● ● Quadruplets
- ● ● ● Quintuplets (central circle is usually larger than the outer satellites)

- Lone Ring
- Lone Double Ring
- Ringed Circle
- Double Ringed Circle (eg Cheesefoot Head 1988)
- Ringed Quintuplet (eg Cheesefoot Head 1986)
- Double Ringed Quintuplet (eg Goodworth Clatford 1988)
- Ringed Single with Linear Spur (eg Childrey 1986, Pepperbox Hill 1987)
- Ringed Single with three outer satellites (eg Oadby 1988)

These configurations do not take into account additional variations in the size of individual circles within the same formation, or variations in the swirl patterns that have been observed.

*One of the rarest of the formations,
the double-ringed circle*

(Photo: Dr Terence Meaden)



CHAPTER (4): THE HOAX THEORY

Throughout BUFORA's 8 year investigation of the circles, one possibility has always raised its ugly head time and time again to account for the phenomenon of the cropfield circles. Given the vested interest in promoting an exotic explanation for the phenomenon it should not surprise us if at least some of the circles were the result of hoaxing (eg by publicity seekers, UFO spotters, or the media). It is a pertinent fact that during the 1980s there have been proven hoaxes associated with the circles, and these have done much to create the impression that all the circles are hoaxes. In particular

- during August 1983, the Wiltshire Times carried an expose of the attempted hoax by Alan and Francis Sheppard, who "confessed" to creating a hoaxed quintuplet formation on their land at Westbury (where many apparently "genuine" circles have been appearing during the past decade or so). The hoax was perpetrated by the Sheppards because they had been contracted by the tabloid national newspaper the Daily Mirror to hoax a circle formation right next to a genuine (quintuplet) formation. The Daily Mirror hoped that a rival national newspaper the Daily Express would report the circle as the landing marks of a giant UFO, whereupon the Mirror could step in and reveal their hoax. Strangely, the Express never publicised the formation, although in subsequent years they did still cover the circles.

On 18th August 1986 BUFORA investigator Philip Taylor took part in a "Nightline" "phone in" on LBC radio with DJ Pete Murray to discuss UFOs. During the show, former Daily Mirror reporter Chris Hutchins phoned in and confessed to his involvement in the Westbury hoax. In clear embarrassment Hutchins admitted that the newspaper had manufactured the circle and he justified the hoax as "just a joke".

- during July 1984, a quintuplet circle formation appeared near the little village of Alfriston in rural Sussex, close to the home of well known Labour politician Dennis Healey. On August 4th the Daily Mail carried Healey's own photos of the circles and proudly proclaimed that "a giant spacecraft" was responsible for the phenomenon. BUFORA investigator Philip Taylor quickly pointed out to the Brighton Argus that the formation was located at "Cradle Hill", and that this was far too much of a coincidence given the existence of a similarly named location at Warminster, Wiltshire.

- during August 1986 a freelance journalist named John Dodds contacted myself and Pat Delgado, claiming to be a reporter for the Mail on Sunday. Dodds claimed that he was writing a serious article about the circles and, because BUFORA's Jenny Randles and Mike Wootten had already circulated free copies of BUFORA's 1986 report "Mystery of the Circles" to all the national newspapers in Fleet Street, I sent Dodds a free copy as well. Later that same week, somebody approached the Petersfield Post, claiming to have photographic proof that they had hoaxed all the circle formations that had been appearing, and offering to demonstrate their circle making ability with press and TV in attendance. A demonstration took place at Froxfield a week or so later, with BBC TV's "South Today" team, BBC Radio Solent and a number of bystanders present to see the results.

No prizes for guessing who turned up with two rather coarse farmhands, both the worst for drink, and both remarking how the circles were "all connected with sex"! It was John Dodds, complete with a pole and chain and very eager indeed to market his "I hoaxed the circles" story to the Daily Star. Thus utilising (without our consent) the information contained in BUFORA's report, Dodd's two accomplices proceeded to trample down a large circle, using the pole as a central pivot and the chain to help force the crop down into a near perfect circle. Over an hour later the hoaxers inspected their perfectly circular hoax, commenting that they always carried a trowel to fill in the (very obvious) hole at the centre of the circle, and boasting how they had hoaxed all the other circles appearing in 1986. When Delgado pointed out a number of failings with the hoaxed circle, one of the farmhands became rather physically annoyed.

It was learnt during the demonstration that Dodd's plan had been hatched in a local hostelry, but as BUFORA's report predicted, the hoaxers produced a perfectly circular zone of crushed and broken wheat with no true swirl pattern, no layering and no banding. Despite their claims that they had hoaxed many circles, no photograph was supplied which showed Dodds and his associates half way through the act of creating a circle, only photographs of undamaged fields and complete circles were produced. The Froxfield demonstration only serves to emphasise how some sections of the media continue to take advantage of the phenomenon to make money from a gullible public.

- during July 1987, four farmhands from Cornwall claimed in the Southampton based Southern Evening Echo that they had hoaxed the second 1986 formation at Cheesefoot Head "by shuffling along on our knees to push down the wheat, then rolling around our bodies in a complete circle". Two of the hoaxers, Ian Mepham and David Forster, explained that they had been in the area collecting horse feed for their employers. "We heard about the rings and the stories behind them from some of the local farmworkers, so we went out to have a look at the existing one. We had no intention of making a ring, but when we got there we decided to give it a go." The hoaxers dismissed claims that the circles were created by UFOs as "utter rubbish" and went on to state that "To get the outer ring one of us simply held the other's hand" (!) "The stupid thing was that this was a Sunday afternoon with traffic passing us all the time."

BUFORA already had suspicions about the circle and ring formation after it was discovered that a passing motorist from Horndean in Hampshire had stopped to observe the rings between 6.30 and 6.45 pm on 6 July 1986. This witness had noticed a red coloured Vauxhall Victor car parked close to the edge of the field in the "punchbowl" itself. There is no direct road to the punchbowl field, and the ground there would have been very rough. Because we know that the second 1986 formation appeared between 6.56 and 7.45 pm, when David Thurlow of the Solent Press Agency discovered the circle, this observation ties in with the Cornishmen's claims. Furthermore, an enlargement of the Daily Telegraph aerial photo of this formation (which Mike Wootten obtained for BUFORA) showed a definite kink in the otherwise smooth outer ring, whilst plans made at the time of the formation's appearance showed that the formation lacked a true spiral pattern.

- during September 1986 somebody went to the trouble to carve out the message "WEARENOTALONE" in the wheat at Cheesefoot Head, with letters 12 metres high and 61 metres in length. This clearly was a hoaxter at work.

- on the BBC TV documentary "Country File" screened on October 9th 1988, the Andover Young Farmers Team demonstrated how to create a circle by trampling down the corn and then touching up the result "to create the scorch marks". The team leader implied that they had been hoaxing circles for some time, and with great humour, they declined to elaborate further on their dubious activities. BBC TV interviewer Ann Brown commented that "thoughts of little green men were suddenly replaced with thoughts of ruddy great men"...

- Following Ralph Noyes' article "Going Round in Circles" in the 2nd February 1989 edition of Country Life, Robin Vernon-Sprake claimed that he and his colleagues at "The Fun Balloon Experimental Company" had been hoaxing the circles with the aid of hot air balloons. "We meet once a month, at a friend's considerable estate and frolic on foggy nights in balloons (two to a basket) which, because of the materials used throughout, give no radar bounce. ... We stick to foggy nights for cover, and the usual drill is for couples to go off for a low-altitude evening drifting for complete peace." Vernon-Sprake continues "Culmination of our unusual hobby usually takes this form: we descend into cornfields, because we know we won't burst, and releasing gas, allow the balloon to deflate over our roofed baskets. Once this has been achieved we sit snug in our cabins concocting Anglo-Saxon tales as we pop a bottle."

Apparently, the "Fun Balloon Experimental Company ... likes to do things differently" (?), and they create the outer satellites of the more complicated formations when sudden gusts of wind cause their balloons to alight briefly then touch down again. Conditions for membership of this rather exclusive club are that members are "generally slim, for obvious weight considerations, and that they are non-smokers, because discarded cigarette ends might set fire to one of our landing spots in dry weather." The Initiation Ceremony for membership of this group is "extremely tough and lasts a week at the Hall. Grand meals are served, however, and all the tests are humane and bearable, provided one has a high sense of humour."

Conclusion

It seems a certainty that some circle formations are the result of hoaxing, either by unscrupulous members of the press, or by publicity seekers. Those formations which are known or suspected to be hoaxes are in fact, quite different to the genuine primary phenomenon, and I believe that the main differences between the hoaxed circles and the real thing are that

- (1) hoaxed circles display no layering;
- (2) hoaxed circles display no banding;
- (3) hoaxed circles display broken crop with damaged heads and broken stems;
- (4) hoaxed circles frequently fail to display a well developed spiral pattern;

(5) the 1986 Cheesefoot Head No 2 formation displayed clockwise rotation in both the inner circle and the outer ring, a characteristic which has never been displayed by any other known formation;

(6) hoaxed circles usually appear during daylight, genuine circles normally appear overnight;

(7) hoaxed circles frequently attract a good deal of publicity; by contrast, 90% of genuine formations go unreported;

(8) hoaxed circles are frequently created by pole and chain hoaxing, and as a result they are perfectly circular; 'real' circles are normally elliptical;

(9) hoaxed circles may exhibit a suspicious hole at the centre of the (perfect) circle, left by the hoaxter's pivot, 'real' circles have no such hole or markings left as a result of subsequent filling in;

(10) hoaxed circles normally have suspicious track marks and footprints across the entire site.

It is important to emphasise that attempts to replicate all the features described in Chapter 3 fail to create what we are discovering in the fields of Southern England (and elsewhere). Delgado's research proved that it is not possible to create a layered, swirl pattern by the application of mechanical pressure, because the crop stems tend to reinforce each other and build up strength. The continued application of a mechanical force (eg by a chain) thus results in the crop snapping or breaking, whilst the force which creates the genuine phenomenon appears to lay the crop flat without causing such critical damage to the crop itself.

Many observers argue that all the circles must be caused by hoaxing. They do so without a deep understanding of the cornfield circles morphology. They argue that photos of circle formations display track marks leading from the nearest tramlines to isolated circles, and that all the hoaxers have to do is walk along the tramlines at night, venture into isolated crop and push the crop down by whatever method they chose, and then sneak away waiting for the formation to be discovered the next day. Unfortunately, photos taken immediately upon discovery prove that there are no track marks whatsoever leading from tramlines to isolated circles, and those visiting newly discovered formations for the first time note a definitive lack of footprints or scuff marks which would be left by hoaxers. Outer satellites in the quintuplet formations frequently lie well away from tramlines with no connecting tracks, though subsequent photos often show tracks left by subsequent sight seers, thus giving the false impression that the circles are discovered with such tracks connecting the circles.

It has been conclusively shown that it is quite impossible to walk through a densely packed arable crop during daylight without leaving a trail of damage which is easily noticeable. Not only is this impossibility further reduced by the nocturnal appearance of most circles, but some circles (eg Cheesefoot Head 1986 no 1) appear during precipitation yet no footprints were discovered in the saturated field within an hour of discovery. Historical circles frequently predate the use of tramlines, yet footprints and suspicious marks were allegedly missing from these circles too.

It seems absolutely certain that these factors rule out hoaxing for the majority of circles, although we are certain that at least a handful of circles seem to be the result of hoaxing. We dismiss the wonderful claim by the Fun Balloon Experimental Company on the basis that (1) circles have been appearing for too many years all across the world for a single set of hoaxers to be responsible, (2) we cannot accept that a bulky, difficult to manoeuvre balloon can create such precisely defined, elliptical patterns (with layering, banding, lack of damage, etc) at night without attracting attention to itself; and (3) the claim is clearly a spoof, by Vernon Sprake's own admission. The Andover Young Farmer's claim is also dismissed for all the reasons described earlier.

Sorting out hoaxed circles from genuine circles and false claims of hoaxing from true claims of hoaxing are clearly major factors in evaluating the phenomenon of the cornfield circles, but regrettably to many casual observers hoaxing is the only rational solution they seem to offer to account for the enigma. We reject the claim that all the circles are the result of hoaxing because of the sheer number of circles being discovered (see chapter 7), their international distribution, the difficulty in replicating the very complex features displayed within the affected zones, and the fact that we have a more successful hypothesis to account for many of the reported features being discovered. We accept however, that it may not be clear which circle formations are the result of hoaxing and which are the result of some other causal mechanisms. Our concern with this issue led to the BUFORA/TORRO Survey and is described more fully in chapter 7.

Other Theories

1. Mating Hedgehogs

Some armchair theorists have suggested that the circles are created by herds of mating hedgehogs (or rutting deer) rotating in unison during moments of extreme passion. I'm not sure why this particular theory has such attraction in certain quarters, except to say that we British are supposed to be a nation of animal lovers and that perhaps this explains why such an absurd theory seems to gain such cresence! Seriously I doubt whether there exists a more insane theory than this, as it fails to explain even one of the characertistics described earlier in this report.

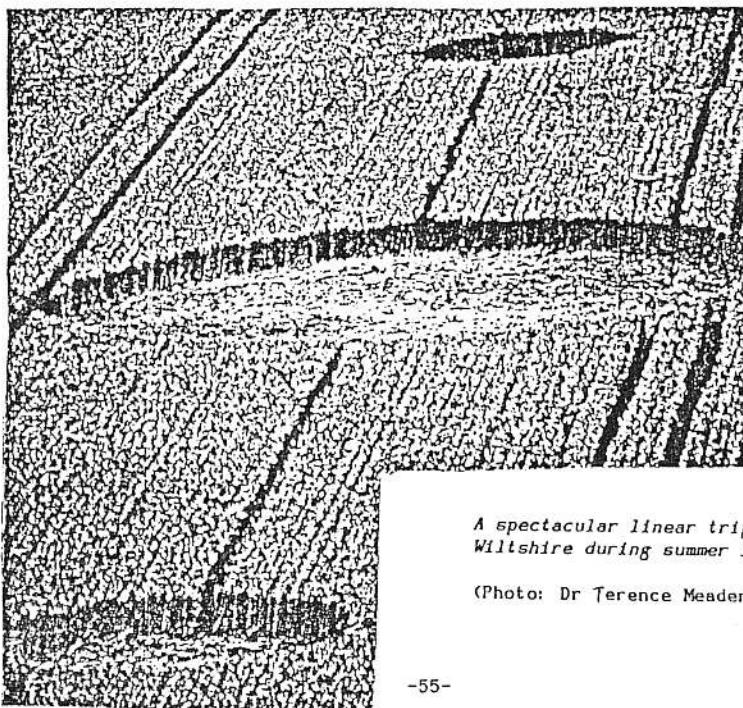
2. Helicopter Downwash

Although Hampshire has a particularly high number of military establish -ments known to use helicopters (eg Middle Wallop Army Air Station, RAF Odiham), we have already dismissed this theory for a number of excellent reasons. It is just possible that more unusual military devices could be responsible for the phenomenon of the circles, but this simply leaves unanswered questions. How can remotely controlled devices create circles ? What gain can there be in using such expensive technology to produce apparantly trivial phenomena as circles in fields ? Surely the use of such devices would be a highly dangerous and risky business at night ? The use of RPVs is clearly a novel method of getting the agent of the hoax to the required location, but we cannot see any way in which a rotor propelled device could create such large features without attracting attention to itself in such a bizarre exercise. Conclusion: Unlikely.

3. Crop Marks

Some observers suggest that the cornfield circles are simply crop marks - the result of subterranean archeological remains such as stones, Roman roads, pits and other archeological sites. Positive crop marks occur when arable crop grows slightly higher than the surrounding crop due to the presence of buried ditches or pits. Negative crop marks occur when both crop and the soil depth are reduced because root penetration is impeded. In all cases the crop is discoloured when compared with the surrounding crop and on extreme occasions the crop may fall over under its own weight during periods of poor weather, particularly following periods of extreme drought. Ring ditches, which date from the Bronze Age, are particularly prone to cause crop marks, but although these rings look very similar to the cornfield circles from some distance, the similarity is largely superficial and illusionary.

Crop marks are rarely, if ever, precisely defined; they never form in the complex geometrical patterns described in this report; they never produce swirled patterns in lodged corn; and no archaeologists has ever publicly described the cropfield circles as identical to the well understood crop marks which have appeared across the Celtic fields of Southern England for hundreds of years. For a full discussion of this topic (with many good photos) we recommend "Aerial Archaeology in Britain" by D.N. Riley (Shire Archaeology 1982).



*A spectacular linear triplet in
Wiltshire during summer 1988*

(Photo: Dr Terence Meaden)

CHAPTER (5): THE UFO THEORY

The 'UFO' theory of circle formation should be taken to mean all speculation which links these crop patterns with a hypothetical force or craft that is intelligently controlled and not of human origin.

Strictly speaking, the term UFO only means *unidentified flying object*. But in most people's eyes that is a synonym for 'alien spaceship'. In truth most responsible UFOlogists (ie those who are active within BUFORA and definitely both authors of this publication) do suspect that there are some cases where anomalous phenomena lie behind the data. However, we regard these reports, such as they are, as natural events on the edge of scientific understanding. The idea that any are 'alien' is still open to debate - just about - but is very far from being proven by the evidence.

Therefore, in several real senses - even if an interesting atmospheric vortex is generating the circles - it could reasonably be termed a UFO, or at least a UFO related phenomenon. But as that would certainly be misunderstood by most people to mean an 'alien' device, BUFORA prefers to state that it does not endorse the concept of 'UFOs' creating the circles.

It is difficult to know precisely what those in the FSR team may mean when they do relate the circles with UFOs. But we have some clues from the references by Pat Delgado and Colin Andrews to 'unknown forces' and 'unknown intelligences', and there is no doubt they have been seeking out sightings of lights in the sky in the vicinity of circle sites. The inference is that these may possibly be considered UFOs which could have somehow created the marks in the fields.

Perhaps, even those at FSR do not intend that alien craft from another world are gouging out the patterns. But others, such as Ken Rogers or Rex Dutta, clearly do believe that. As indeed do some speculators who have written to FSR pointing out so-called 'hidden messages' within the circle measurements. Of course, you can conjure up almost any 'alien' message you chose by juggling with the facts and tossing in a few stray speculations.

For example, take the first syllable of some of the major sites where circles have regularly appeared... Warminster, Wantage, Winchester and Westbury. From these you can clearly see that the 'intelligence' planting the circles wishes us to know that they *Want the West to Win* the next War... Can't you? No wonder the Ministry of Defence are so interested in these circles!

We deliberately made this example utterly absurd. Yet, because of the ease with which one can slip into that sort of thinking, we believe that even the more tepid remarks from Pat Delgado, Colin Andrews, Bernard Finch and others reflect badly on the UFO subject. The media never have understood that there is a fine distinction between rational or 'sensible' UFO possibilities and the more glamorous and extremist 'spaceship' ideas. To the uninitiated they tend to be regarded as one and the same and everyone is tarred with the same brush if they talk about 'UFOs'.

For that reason the strength of the evidence supporting a UFO link has to be examined with considerable scrutiny. If it stands up to rigorous study then the FSR team do have a valid case. If it does not stand up, then it is tempting providence to be linking it with the circles. One cannot build improbable theories out of anything less than rock solid evidence.

According to the FSR team this evidence IS rock solid. In December 1988, George Wingfield, the latest of their long line of consultants to get mixed up in the circles controversy, wrote that "The connection of the circles with the whole subtle and complex UFO phenomenon should be by now beyond reasonable doubt." Challenging words indeed - but written with what basis in hard fact?

Aside from what is (in our view) the completely spurious link between the 'abduction' of Mrs Joyce Bowles near Winchester in 1976 and the circles found in later years near that town, the first 'case' to come to public attention was not until the summer of 1985. By then circles had appeared for five previous summers without any relevant UFO reports. Sheer statistics made it an absolute certainty that such a situation would have to alter.

What we mean by that statement is simple. The number of circles being reported or publicised seemed to be constantly escalating. Hundreds are now known about from a fairly confined area. On the other hand many hundreds of UFO reports are made each year. The Ministry of Defence figures show some 2,000 sightings received from various sources for that same period (1980-85). In addition we know from a number of opinion surveys (eg those conducted in 1987 by Gallup) that only about *one in ten* of UFO sightings are ever made public. And we know from the BUFORA/TORRO Survey that only *one in ten* circle formations are being reported. The result of all this must be inevitable. Some sightings would simply have to occur that more or less tied in geographically and around the same time as some or other of the circles.

None of that proves anything. The simple reason why it is useless is that around 95 % of all investigated UFO sightings turn out to be misperceptions of one kind or another. Therefore, those sightings which purport to show the connection between UFOs and the circles must, as a necessity, not only have a very close inter-relationship with the rings, but must also be thoroughly investigated and prove not to have any reasonable solution. If they do, then common sense alone dictates that we must accept that answer. Although FSR has on several occasions discussed some of the 'circle sightings' there has been little, if any, indication of an investigation to rule out conventional sources. They seem to have been treated as UFOs merely because the witness reported them as such and they are near a circle. This is not good science. It is not even good UFOlogy.

FSR consultant Omar Fowler reported the first 'UFO' sighting in his Surrey group newsletter Pegasus (September/October 1985). This was a 'special' issue discussing the circles in some depth. The details are given of a lady from Over Wallop, near Stockbridge, Hampshire, who saw a large central light surrounded by four satellite lights at 5 am on the morning of 7 August 1985. Of course, the comparison with the quintuplet circle formations is obvious. The sighting occurred in the general vicinity of earlier circles.

However, the problems with this case begin when you look past any desire to connect it with the circles phenomenon. For a start, the witness reported it after press accounts of quintuplets had appeared. Secondly, she was looking out of her bedroom window at this stationary light. It remained there for over 20 minutes - doing nothing. She went to bed and left it still there, but when looking again at around 7 am (well after sunrise) it had gone.

The truth comes after spending a few minutes with a computer programme plotting star and planet positions. This is an essential step for any aspiring UFOlogist and represents merely common sense and investigational experience. In this case, the woman was looking right at the planet Venus, which was very bright in the predawn sky. Presumably the quintuplet shape was a combination of the fact she had just woken up, was looking through tired eyes and a bedroom window, plus her subconscious knowledge of what circles might look like.

This is a very common response to unusual light phenomena by even skilled observers. It presupposes no disrespect to this particular witness. There is nothing whatsoever in this case to connect it with the circles after but a minimum of investigation.

That summer there was a second sighting which has attracted much more attention. Colin Andrews describes it in detail in FSR under the heading 'Circles in the corn: strong evidence of a 'UFO connection''. It was, in fact, the event he claims precipitated his involvement in the entire crop circles mystery.

At 11.30 pm on the night of 6 July 1985 he tuned into Hampshire police on his VHF receiver. They were sending patrols from Winchester to Stocksbridge Down to where a couple claimed to have seen a UFO hovering beside the A 272. As Colin Andrews set off to drive to the spot he continued to listen in and heard the headquarters at Winchester tell their patrols to treat the matter seriously, as they had the couple with them and they were obviously shaken by what they had seen. Later the police reported that they found nothing at the site (nor indeed did Colin Andrews when he got there) and that, as Andrews even says in his FSR piece about the police investigation; "...there had turned out to be nothing in the story."

Nevertheless, with the help of a persistent local journalist he tracked the couple down. They were two pensioners, Jack and Pat Collins from Winchester. Whilst I am sure they were completely sincere in reporting what they saw, their account needs to be treated with some caution.

They were driving along the A 272 towards home at around 11 pm when Jack saw a light hovering over the downs. He was moving towards Winchester to the south-east, so the direction involved should be noted. Jack describes the light as 'a perfect circle' but Pat added that it was akin to a fairground wheel with lights round the rim and spokes from the centre. It was very bright and apparently did not move.

Jack became concerned and accelerated into Winchester to report it. But when the police went to the spot it was no longer there. On a BBC television interview in the summer of 1988 Pat added; "I definitely think it's something. It is not of this earth." The crop circles were linked to it by the couple. They speculated that they might be caused by the spaceship which they saw with its "four feet coming down" (a feature which they did NOT actually observe in reality at any time).

According to Colin Andrews the real significance of this case is that the very next day a circle formation was found at Goodworth Clatford, a few miles to the north west of the location. Whether the circles were formed on that very night is unknown, but even if they did so the connection between the UFO and the field where they appeared is little more than tenuous.

FSR reports no investigation into the UFO. However, if you look at two bits of data you find a vital clue. The weather was partly clear and partly cloudy. And low in the south eastern sky at the time of the sighting was the brightest thing in the heavens until Venus rose a few hours later. This was the planet Jupiter. When as bright as this, there have been many occasions where witnesses have seen Jupiter as a 'huge circle'. The 'wheel spokes' illusion is another common feature of this brilliant planet in its prime.

We cannot positively explain this sighting as Jupiter, but it is a very probable solution under the circumstances. Possibly when the police got to the site it was covered by cloud. Certainly, these are crucial facts that FSR should have pointed out. However, they seem to have fallen prey to the trap which makes one assume that the object was a UFO. Their failure to discuss basic investigative procedures once again encourages the myth that "intelligent" UFOs are creating the circles, when in reality we seem here to have a simple IFO (*identified flying object*). Needless to say, Jupiter, certainly could not have had anything to do with the circles found nearby.

By now I trust you see that the 'UFO' evidence, so greatly touted in certain quarters, is nothing like as impressive as you might have anticipated. If it were, then we would certainly not be adverse to accepting it. As UFOlogists it would be of great fascination if bona fide UFO cases were associated with the circles. We are also well aware that wind vortices have been known to produce strange lights through electrical and plasma forces generated by the energies involved. So, if there were reliable UFO sightings indisputably linked with the circles, we might regard them as possessing scientific merit. Certainly, we are far from "prejudiced" against the UFO evidence simply because of its unorthodox nature. But facts are facts and, in a situation such as this, must be allowed to rule.

Colin Andrews cites another case from 4 July 1986.... But he says this came to him via an anonymous farm-hand whom he met whilst surveying circle locations. The farm-hand reported that he saw a chain of about seven diffuse white lights ('like a string of molecules') in the vicinity of Cheesefoot Head. On arrival home he had a 'feeling' that something would be found in the punchbowl the next day. By that year and at that particular time in early July the odds you would have got on circles imminently turning up at Cheesefoot Head would have barely made a worthwhile bet. Nevertheless, Pat Delgado did find circles there the next day (if you recall they were followed hours later at the same site by an identical HOAXED formation).

Superficially, this one report might be of interest. But we have only an anonymous anecdote made a year after the events took place and reported to someone who was plainly showing interest in a UFO-circles link. The circle set with which it is connected is one of the very few where at least some part of the evidence is a PROVEN hoax. Once more, this all becomes less impressive when you sit down and analyse the facts.

Probably the most initially persuasive sighting reported by FSR stems, in fact, from the Winchester Extra (20 August 1987). "I saw UFO land in a cornfield" is their graphic headline. It tells how a 58 year old man was walking his dog in the Cheesefoot Head area one evening 'seven summers ago' (ie 1980). This was the year when the only known circles were in Westbury, well to the north. Hearing a 'combine harvester' noise he saw a "giant grey 'spaceship-like' object floating across the top of the cornfield". This UFO had 'portholes', landed for five or six minutes then shot off towards Alresford. Beneath it was left a ring of flattened corn "identical to the ones that have appeared each summer since". His dog was allegedly terrified and has refused to visit the area again. An unidentified woman passing by also saw the whole thing. The witness justified so many years of silence despite the media hype by saying he was "frightened".

FSR state for some reason that the case occurred in 1982 and refer to an interview with the witness conducted by Colin Andrews and Pat Delgado during late 1987. A third anonymous witness (a council dustman) is now added and, supposedly, the two cars and the dustbin truck of all three witnesses are said to have failed to start during the close encounter. Furthermore, the witness is reported to have *photographed* the UFO (but not the circle left behind?). Despite his terror causing him not to report the events until six years later, he gave the photograph to a local journalist in 1981 (??) when the circles started to turn up annually at Cheesefoot Head. This reporter now had no idea where the photograph was, according to FSR. They note his suggestion that it may be in his bags, still unpacked after a recent move!

None of this confused and vague additional material suggests that the sighting or 'UFO photograph' was of earth-shattering quality. Otherwise, why did this local newspaper never try to scoop the world and publish what is by any stretch of the imagination reputedly astonishing evidence?

Paul Fuller did also investigate the case for BUFORA, before FSR published their comments. The witness was now giving a time span of 1980 - 1985 for this vacillating, feebly remembered and yet terrifying event. Furthermore, and despite being asked whether he took any photographs, he contradicted himself strangely by not mentioning the one he told Andrews and Delgado all about (the one that 'disappeared'). The location from where the witness claims to have seen the UFO is also interesting. Site reconstruction is another essential element of good investigation and Paul Fuller quickly established that you cannot see the landing spot from where the witness claimed to be. It might be added that neither of the other two witnesses have come forward despite the media publicity for this case.

The same witness featured in the Winchester Extra again (21 April 1988) - this time complete with a photograph of himself reading a UFO book. He was now describing another sighting of "yellow flying saucers" above Winchester.

He now claimed the support of two patrolling police officers who had also seen the 'saucers', but the local police categorically denied any such report. This apparently very lucky eyewitness is said to be a member of an otherwise unheard of UFO society. The paper noted that he was "surprised to see them so early in the year. 'They generally appear around June or July.'"

All of these new pieces of information should be born in mind when you judge the value of this only known (alleged) eye-witness observation of a circle created by a UFO. Whatever FSR chooses to think about it, BUFORA regards it as very low quality evidence. We have decided that too many questions remain to regard it as valuable data on crop circle formation.

Perhaps the most bizarre 'case' discussed by the FSR team features in a very long article from Colin Andrews (Vol 33 No 2, June 1988). In this he describes a tragic incident which took place on 22 October 1987.

A British Harrier 'jump-jet' left Surrey on a test flight that afternoon, flew over Hampshire and passed a routine radio message to RAF Boscombe Down before there was complete silence. Shortly afterwards the Harrier was found by an American military aircraft still flying on its same east to west course but now out over the Atlantic just south west of Ireland. They filmed what they saw, because the cockpit canopy and pilot were both missing! The Harrier flew on for over 400 miles on 'automatic pilot' before crashing harmlessly into the unsalvageable depths of the ocean. It was the next day before the pilot was found in a field near Stonehenge by a local gamekeeper. His main chute was some miles away, but with the body was a secondary chute. He had been killed by impact injuries.

Speculation abounded over the strange incident. At the subsequent inquest the general conclusion was that an unfortunate fault (which had been suspected on other aircraft) had caused the pilot to blast clear.

In a normal emergency there is an ejector seat which clears the canopy and then the pilot can use a manual separation device to break him free of this and fall to earth via parachute. The ejector seat had NOT fired and the most likely explanation was that the separation device had triggered inside the aircraft, throwing the unfortunate pilot through the roof of the jet. He may possibly have been dead or badly injured before striking the ground, hence the inability to use the parachute to save him.

Obviously, this was a great tragedy. But why connect it with UFOs or the circles? According to Colin Andrews, as soon as he heard of the accident he "had had a strong inner feeling" it was somehow connected. ESP, intuition or wishful thinking? Whatever was the case, as Colin Andrews rushed to the site to watch the military investigation of the pilot's body commence, he was not surprised to discover that it was about a mile away from where that previous summer a four ring set of circles had appeared.

Naturally, Mr Andrews did his patriotic duty and reported what he knew to the investigating military authorities. They were allegedly "very interested" and said "we will be in touch with you again soon." But they apparently never did. Of course, we can speculate about 'unknown force fields' causing the incident. However, there was certainly no direct correlation with the circles (all long harvested well before late October).

Also you have to remember that this is one of the busiest areas in Britain for military flights. That one aircraft got into trouble more or less over an area where a circle had once been (hardly a major coincidence given how many circle sites there are) barely qualifies as evidence for anything. Colin Andrews does suggest that circles actually appeared in the same field as the one where the body was found. We await publication of more details.

What concerns us most about this case are the frequent allusions made by ESR to government interest in UFOs and circles. Hence the alleged significance of this incident. Evidence here does seem to be very limited and we are most concerned at what the widow of this Harrier pilot might think about public suggestions that her husband was the victim of an invisible force field controlled by unknown intelligences.

A number of other isolated UFO sightings exist, such as the claim by a psychic of a message that circles would be found nearby after seeing a light in the sky... They were. However, we do not propose to assess every single instance, because it should be apparent by now that all the main ones do have alternative possible explanations. We are not suggesting that Andrews, Delgado and ESR are fabricating or deliberately distorting evidence. But we do feel that these stories can, and should, be looked at from a more critical perspective and that this has illuminating consequences.

As we go to press the most recent UFO sighting in connection with circles ties in with the spectacular multiple formations that appeared in the vicinity of Silbury Hill, near the Avebury stone circle, during July 1988. These circles were indeed something special; although as George Wingfield reports in ESR (Vol 33 No 4, December 1988) there were two very important facts that the UFO supporters (including him!) must bear in mind.

Firstly, high tension power lines cross directly over one of the quintuplet sets. Nothing physical (eg a spaceship) could possibly have descended and created this particular formation whilst leaving the wires untouched.

Furthermore, the local electricity board suffered no effects on the night this set was created (15 July). If a strange magnetic field had produced the circles could it have failed to interact with the electricity supply? Of course, even suggesting that an atmospheric vortex caused this set has its problems given the presence of the power lines. Would they not have effected the flow pattern of the wind in any way? Dr Meaden believes that his theory explains this point because these vortex columns approach from an angle, thereby missing the power lines.

Secondly, there is some circumstantial evidence that these circles might have been faked to tie in with the Avebury/Silbury Hill connection (a previously 'unvisited' yet mystically appropriate location). Numerous small footprints were found by the very first inspection of the site, including some actually *under* the flattened wheat. Colin Andrews himself concluded that this could be suspicious. It suggested a hoaxer might have tried to mask their tracks.

We applaud such objectivity. Unfortunately, Colin Andrews had also arranged for a dowser to visit the fields, with 'positive' results. This apparently mitigated the idea of a hoax. Furthermore, George Wingfield contends, this could not be a simple hoax by the normal 'pole and chain' methods. It had to be a complex one which, he says, would involve "people whose methods and motives are far more obscure and quite possibly sinister." Indeed, as FSR also notes; "one could speculate that the 'shoeprints' were not of human origin at all." Well, one could, I suppose.

Another 'positive' factor about the Silbury Hill circles is the UFO sighting reported in connection. The witness is a young woman called Mary Freeman who was travelling south east through Avebury on the A 361 after 11 pm on 13 July 1988. To the south (towards Silbury Hill) she saw a golden/white glow illuminating the low cloud. A tubular column of white light shone up from the ground toward the cloud (or vice versa) and was either coming from, or was the source of, the glow above. The object was elliptical and the beam was at a 45 degree angle. The edges were fuzzy.

Mary Freeman drove on feeling 'honoured', as she oddly put it. Moments later some small items (eg papers and a cigarette pack) 'shot' off the front shelf of her car into her lap. This mildly innocuous event has for some reason become connected with the UFO. After about three minutes, now driving towards the Hill in a strange 'compulsion' the UFO was obscured by trees. Upon emerging from the other side there was nothing to be seen.

Once again we have a very sincere witness who obviously saw something. But what? My immediate impression upon reading the account was that it has striking similarity with several other cases that have been investigated by UFOlogists in the past. You must bear in mind that the Salisbury Plain area is full of military activity. Other reports such as this have on occasion turned out to be powerful ground searchlights trained skywards as part of some exercise. The beam, when shining off the base of cloud, can create the ellipse and the tube rising up to it. Nothing in the description offered by Mary Freeman seems to counter this possibility. As far as I can tell it was never investigated. The idea of car headlights shining off cloud was considered and (probably correctly) rejected due to the stationary nature of the phenomenon. But - whilst this 'sighting' may indeed be most interesting and possibly a 'genuine' light effect associated with vortices or circles - we should not rule out a searchlight beam.

For those seeking comfort for the UFO hypothesis out of this sighting one crucial fact must be recalled. The UFO was positively seen at least 24 hours before the circles formed. They cannot have been created on the night when the UFO was seen, because the field in question is readily visible from the very busy A 4 trunk route. It is inconceivable they would have avoided detection had they been there in daylight on 14 July. But, of course, the FSR team do not regard that as a problem. George Wingfield concludes from this difficulty that the energy in the ground, under the control of an intelligence, built up slowly over those couple of days, first generating the UFO, then many hours later forming the circles.

Well, maybe it did. But isn't the alternative down to earth explanation (searchlight and coincidence) just as likely?

The trouble with the connection between these circles and UFOs is that there are so many circles, so many things that can be reported as UFOs and such a lot of military activity in this concentrated area, that spurious links are bound to crop up. When FSR publishes in connection with the circles solid and reliable UFO cases of the calibre of the intensely evaluated Lakenheath/Bentwaters Air Force Base encounters (August 1956) or the more recent extensively documented events at Hessdalen in Scandinavia, then BUFORA would certainly pay heed. Doubtful and poorly researched lights in the sky are not persuasive evidence of anything at all.

Also, if you seek hard enough for a link between UFOs and the circles then you are likely to find one. It may surprise readers that some of the 'best' evidence for a UFO connection has strangely eluded Colin Andrews, Pat Delgado and friends. The sighting occurred a couple of weeks after the news broke about the first circle sites near Westbury in Wiltshire; although the witnesses were only passing through the area and had no idea that the circles then existed.

A young man and his girlfriend, were on a motorcycle returning from the Farnborough air display. The time was 9.15 pm on the night of 6 September 1980. The location was on the M 4 motorway just past Wootton Bassett. These events were immediately reported to the group PROBE, who conducted a detailed investigation and published their case study in Probe Report.

A brilliant white light, at 20 degrees elevation and just above the hill-line, appeared to the south. The pillion rider's immediate reaction was that it was an aircraft having switched on its landing light. Then the light split in two, and the two objects drifted apart slightly, although maintaining the same elevation. They were now clearly separate. Had they been lights on the wing tip of an aircraft, for example, they would have almost been on top of the motorcycle. Next the two lights exploded silently and flared into incredible intensity far in excess of any landing light. Her boyfriend could not stop (as it was a motorway) but had already seen them. As they rode past the lights a third came from out of the right hand object so that all three were hovering, in a wide triangle formation. They were in view for a minute until it became impossible to look back at them.

The Westbury circles site is around 15 miles south. Even closer, about 8 miles in the precise direction of the lights, is the location of the July 1988 UFO and the Avebury crop formations beside Silbury Hill.

In fact the witnesses themselves were sufficiently aware of aerial phenomena to suggest an interesting theory; that these lights might have been flares used in a military exercise and released on parachutes to illuminate the ground. That must be a possibility, but even if this encounter remains unexplained, the link with the circles phenomenon is decidedly spurious. Yet it is typical of how you can make a sighting fit in if you really want to. After all a triple set of circular lights seems a very nice analogy to the triple circles that were soon appearing in the area.

As with all these cases a good deal depends upon the objectivity of the investigators and how keen they are to associate any particular event with the nearby circles. This can only ever come down to a value judgement.

In this instance I am as positive as I can be about the quality of the Wootton Bassett observation. I am also fortunately able to endorse the probability that the strange lights were indeed parachute flares. And I can say with virtual certainty that the events had nothing whatsoever to do with the mystery circles, however tempted you might have been to tie this sighting in with the subject of this booklet.

But I can only do all of these things for one simple reason. A reason that would not apply if this were another anonymous report in FSR or an anecdote published elsewhere.

I can do it, because I was the girlfriend on that motorcycle pillion.

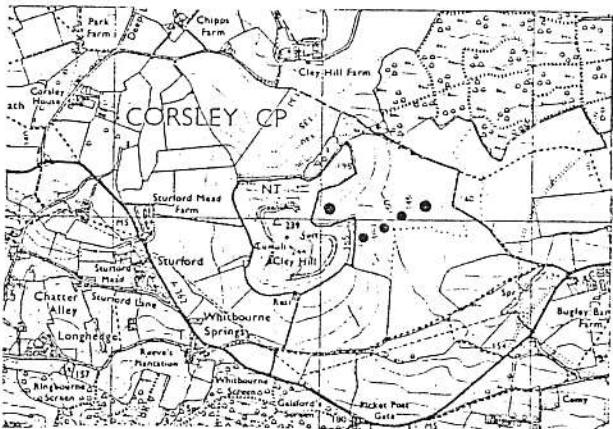
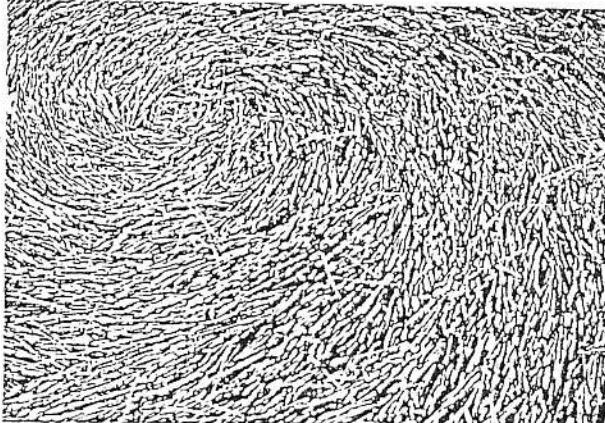


Fig 5: Cley Hill,
near Warminster

known circles 1981-85

Ordnance Survey Map
scale 1: 25000
or 4 cms = 1 km

Reproduced with permission



*The centre of a typical circle
showing the spiral effect on crop.*

(Photo: Dr Terence Meaden)

CHAPTER (6): The Vortex Theory of Circle Formation

Since 1986 BUFORA's investigation of the "mystery circles" has led to the mutual exchange of information with the Tornado & Storm Research Organisation (TORRO), based in Bradford-on-Avon in Wiltshire. The TORRO constitutes one of the few truly independent meteorological organisations in the UK and its work involves professional consultancy and data analysis (eg they have been involved in the calculation of risk factors for tornadic damage to the proposed nuclear reactor at Sizewell in Suffolk).

TORRO holds the largest collection of British tornado reports (1500+) dating back to the 9th century, as well as data concerning thunderstorm activity, giant hailstones, ball lightning events and falls of anomalous material from the sky. Since 1981 the organisation's Director Dr Terence Meaden has visited or verified over 400 circles in the South of Britain. Dr Meaden's research has always been based on strict scientific method (Readers are strongly advised to read Dr Meaden's book "The Circles Effect and Its Mysteries").

6.1. What are Vortices ?

Natural atmospheric vortices serve to transport air from one place or altitude to another, to achieve a more uniform distribution of heat energy throughout the atmospheric boundary layer (the lowest kilometre of the atmosphere). The commonly recognised atmospheric vortex is characterised by an ascending column of rotating, warm air which is maintained by a continuous supply of super buoyant air being drawn into its base by convection. Meaden distinguishes between two types of vortex according to the prevailing weather conditions under which the vortex forms:-

(A) Major Whirlwinds, which typify bad-weather conditions and originate inside cumulonimbus or cumulus clouds where vigorous upcurrents of air are set into rotation and then extend their influence well below the cloud base. Major Whirlwinds often reach ground level in the form of a well-developed funnel cloud (like in the Disney film 'The Wizard of Oz'), which tapers from a very broad exit at the base of the cloud to a narrow tip or spout at ground level. Major whirlwinds can be very large (up to 10 km in height) and they tend to last for hours, ascending and descending frequently, and often causing major damage and destruction. Fortunately, Major Whirlwinds are most infrequent in the British Isles.

(B) Minor Whirlwinds, which typify fair-weather conditions and consist of (normally less violent) vortices originating at ground level (usually without a parent cloud) where rising thermals of buoyant unstable air form under prolonged insolation in relatively sheltered locations. These minor vortices are set spinning by wind shears (the variation of wind speed with height) or by the presence of micro-fronts (eg an on-shore sea breeze).

Both Major and Minor Whirlwinds are normally invisible unless they pick up debris or water vapour (which only occurs when rapid rotation causes the air pressure within the vortex to become low enough for water droplets to condense).

Major vortices are renowned for their immense power and ability. In "The Guinness Book of Weather Facts and Feats" (1977), Ingrid Holford cites accounts of a tornado lifting an 83 ton railway coach containing 117 people 80 foot into the air, as well as a British tornado which pushed a 90 ton railway locomotive 150 feet along its track near Rotherham, South Yorkshire.

6.2. Atmospheric Vortices - Just Another IFO ?

UFO research has frequently come across cases which seemed anomalous and were thus related to them as U.F.O.s by the media or by witnesses. Only in more enlightened times of critical evaluation have some of these now been ascribed to unusual wind vortices, especially as the climate of the British Isles is generally (if not accurately) regarded to be placid and untroubled by such phenomena. For example, a relatively small travelling whirlwind cut across south Cheshire and north Staffordshire in summer 1973 and left a narrow but very intense path of localised destruction. Here is an account from the magazine 'Northern UFO News' (Issue 22, 1976) written by Jenny Randles from the completed investigation by Derek James. The event itself occurred at 14.30 hrs on the warm afternoon of 4 July 1973.

...trailing behind (a Goodyear blimp which had passed over shortly before) was a funny black cloud. The weather was perfect and there were no other clouds. The first sighting was made over a small hill outcrop (Cloud Edge) rising from the Cheshire Plains. A woman reported the cloud and a 'brilliant star' above it, which kept popping in and out (of the black mass). The cloud sailed on majestically over the Potteries directly against a very light breeze... At Kidsgrove, as it passed by, an astonished train driver told how a very heavy sack of coal suddenly took off upwards... Next a field of hay was sucked up by the cloud at Chell Heath and dumped unceremoniously on houses in Burslem, a mile away. In Stoke itself, the mischevious cloud tugged the roof off a builders hut and dropped it - onto a civic leaders car ! Reports came in from farmers in the line of flight who observed straw and other sundry items rising skyward into this cloud - though again absolutely no wind was detected... Officially a 'whirlwind' was said to be the cause."

This conclusion was challenged by many of the eye witnesses, who were unfamiliar with the concept of whirlwinds in the English countryside. However, an extensive search of the records of British UFO groups reveals not a single UFO sighting for any time on that same day, other than these fascinating reports that were attributed to the wind vortex itself. The dark cloud and 'brilliant star' (electrical discharges ?) were evidently linked directly with the travelling vortex and that poses interesting questions about whether 'U.F.O.s' that have been alleged in connection with the southern England circles might not also be potentially explicable in a meteorological sense (See Chapters 4 and 6 of Meaden's book "The Circles Effect and its Mysteries").

One of the eye witnesses described to Derek James his observation of the incident apparently shortly before the whirlwind set off on its south south-easterly trail. He was at a field near the Jodrell Bank radio telescope at Goostrey in Cheshire when he reported the following;

"A column of straw was rising vertically into the air where a black indistinct shape hovered at an estimated (probably over-estimated) height of 750 feet. The object remained stationary for fifteen minutes... One man walked into the centre of the field with straw rising all around him, but felt nothing."

It is worth noting that this case was reported as a U.F.O. event and is probably still interpreted as an anomaly by some of the eyewitnesses and many investigators. Yet it shares attributes with the cases under discussion in this report, as well as occurring at the centre of the same closely defined mid period of summer weeks when circles tend to appear.

Furthermore, it has a near identical twin sighting that occurred at the same sort of time (15.00 hours) on a similar warm, calm, day almost precisely four years later (3 July 1977). This 'U.F.O. encounter' has featured in several popular books describing leading British cases (see, for example, "Close Encounters: The strange truth about UFOs" by Alan West and David Jefferis (Arrow Books, 1978).

The details of this case are briefly as follows. A family were enjoying a day in their garden at Upperley Dene in Northumbria (about as far north in England as you can get from the circle formation sites) when they saw an oval-shaped black 'cloud' that rose from trees at the bottom of their garden. At the upper limit of the trees it stopped climbing and hovered for some seconds; although clearly rotating. What was described as 'fine, black feathery material' was being pulled up with it and now engulfed the hovering oval mass. One witness moved towards the object (several metres in diameter) and saw it accelerate towards him, passing over his head and that of his parents at approximately roof-top height. The swarming material appeared to 'melt into thin air' as the cloud passed over. As it moved out of sight a blast of wind (described by them as 'of hurricane force') rocked the family. Neighbours who saw nothing did, however, hear/feel the effects of this sudden wind blast on an otherwise very calm day.

Why should a UFOlogist regard this as a sighting of a 'craft'? Yet that is how the West and Jefferis book terms it. According to meteorologist Dr Terence Meaden it is a classic case of a swarm of tiny insects seen in conjunction with a small vortex.

6.3. Unusual Characteristics of Atmospheric Vortices

Despite the fact that vortices seem to be well understood phenomena, the meteorological literature is full of fascinating anomalies associated with these events, and I can do no more than recommend the reader to obtain William R Corliss' "Tornadoes, Dark Days, Anomalous Precipitation and Related Weather Phenomena" (1983), which cites dozens of accounts of unusual and/or unexplained vortex-related anomalies, including:-

- (a). The ability of some vortices to suck up a river as it passes, leaving the river-bed momentarily dry at the point of contact;
- (b). The ability of some vortices to pick up humans, carry them long distances, and then place them down again without harm or injury;

- (c). Vortices which deplume poultry and birds in flight of their feathers.
- (d). Vortices which kill humans and livestock, leaving unusual burn marks on their victims and charred, dehydrated vegetation in their wake;
- (e). Vortices which appear suddenly, without any warning, on a fair windless day with an explosive retort; and
- (f). Vortices which are accompanied by unusual luminous aerial phenomena known as "tornado lights", as well as accompanying thunder and lightning during otherwise calm weather conditions (see for example "On the Nature of Ball Lightning" by Stanley Singer, Plenum Press, London 1977).

There are also accounts of vortices which leave giant semi-circular "suction marks" in soft, wet ground as evidence of their passing due to the pressure gradient within their funnels (Holford op cit). This particular feat needs to be borne in mind by those UFOlogists who seem very eager to dismiss the possibility that natural atmospheric vortices are capable of creating cornfield circles !

Clearly even relatively common meteorological phenomena seem capable of doing all manner of things which meteorologists are currently incapable (and some may probably be rather unwilling) to explain. We believe that their role in UFO events is very possibly far more common than UFOlogists have so far anticipated.

The Evidence for the Vortex Theory of Circle Formation

This report can attempt to do no more than briefly summarise the challenging theory being developed by Terence Meaden. Whilst we have tried to pick out those parts of his theory which seem to us to be persuasive evidence for a meteorological explanation for what is happening, we can do no more than recommend the reader to suspend their pre-conceptions about this fascinating subject and to read Meaden's theory for themselves. We believe you will be impressed with many of his proposals.

6.4. General Precis of Meaden's Theory

Maden is proposing that the cornfield circles are being created by a previously unrecognised species of plasma vortex with properties similar to that of "ball lightning". This low energy plasma vortex forms and hovers for long periods in the atmosphere before occasionally descending to ground level where it leaves evidence of its presence in arable crops and wet ground (possibly leaving craters behind). The vortex consists of a charged body of rotating ionized air which is capable of inducing currents beyond the parent vortex itself. The outer rings which surround many formations are caused by an "ionized race track" which often flows in the opposite direction to the particle flow in the parent vortex. The outer satellites of the more complex formations are created by the congregation of ions at so-called Kapitsa-type nodal points which are fed by outer sheaths of ionized air which may or may not descend to ground level to produce rings.

Please do not be alarmed if you cannot fully comprehend the nature of Dr Meaden's model. It is presently phrased to stimulate fellow meteorologists and embraces concepts that are sometimes difficult for the lay person to appreciate. However, we shall try in the following pages to outline some of its features as readily as possible.

Meteorologists already accept that atmospheric vortices (particularly major vortices) are often accompanied by unusual electrical effects. Meaden contends that an electrically charged vortex helps to account for some of the more unusual luminous phenomena and sounds that have occurred during observations of actual circle formations (see below) and he extends his theory by attempting to account for sightings of day-light disks and car stop incidents (often reported as UFOs and seen in conjunction with unusual light phenomena.) Readers should note that Meaden cites several examples of unusual luminous phenomena seen in conjunction with newly formed circles - including an example from France in the early 1960s - and he also cites cases of vortices with unusual optical effects and acoustic phenomena.

Maden proposes that these plasma vortices are triggered by the flow of air around topographical features which produce "trailing vortices" on their leeslopes (a perfectly ordinary, recognised meteorological process). This accounts for why so many circles appear at hillslope sites such as Cheesefoot or Westbury (see maps on pages 38 and 39). At Cley Hill all five known circles appearing between 1982 and 1985 formed on the eastern side of the hill (see Figure 5, page 65). In Southern Britain prevailing wind currents frequently originate from the south-west, thus creating leeslope eddies on the eastern slopes of Cley Hill. On two occasions, the wind direction was known to be from the W-S-W or thereabouts, thus proving that the circles formed in lee-slope situations.

Maden accepts that at present he cannot account for all the reported manifestations of the phenomenon, but it seems clear from his meticulous research that many accounts exist of vortex type phenomena seen in association with unusual damage to surface features. His book contains more than enough circumstantial evidence to demonstrate that such cases are intrinsically linked to the circles effect and readers will have little difficulty in identifying the exciting direction in which Meaden's research is taking him.

6.5. The Eye Witness Accounts of Vortices Creating Circles

We are aware of 5 alleged "eye witness accounts" of vortices creating circles (or of vortices being associated with nearby circle formations).

(a) In the magazine The Unexplained, no 132 (April 1983), a Mr John Lewis of Ross-on-Wye, Herefordshire, reports an occurrence of late summer 1981 (reprinted in J. Met. Vol 8, no 81). The witness heard "a very loud roaring sound, not unlike an express train..." This increased to "something like the sound of a falling bomb". The next morning he discovered two newly formed circles in a nearby field of barley. Local confirmation of "a quite fearsome whirlwind (which) had run ... through a farm, scattering hay and straw bales like feathers..." supports the coincidence that a noisy whirlwind occurred in the same location as two newly formed circles.

(b) In J.Met. Vol 10, no 97 (March 1985), and on the BBC TV documentary "Country File", a Mr Melvyn Bell, of Spiers Piece, Keevil, Wiltshire, "recounted his observation of a whirlwind which he watched flattening wheat into a circle towards dusk in the summer of 1983. The date was late July or early August, and the place was a dry valley running from west to east on Littleton Down at ST 9752 which is below Great Cheverill Hill. Mr Bell was horse-riding at the time, and stopped when he became aware of a whirlwind starting up below him in a field adjacent to the bridle-path. 50 to 60 metres away he could see dust, dirt and other light debris spiralling into the air, and in a matter of only a few seconds a 10-12 metre diameter circle was flattened out in the wheat as he watched. At that distance he was not aware of any accompanying noise".

It is interesting to note that Mr Bell's observations occurred "towards dusk" (many circle formations seem to occur at night), whilst the very short duration of the vortex supports the probability that chance observers of vortices creating circles would be very rare. Clearly if vortices are creating circles, it makes no sense at all for these events to last for appreciable lengths of time (many tens of seconds); the shorter the duration of the event, the less opportunity there will be for the vortex to move.

(c) In J.Met. Vol 13 no 132 (October 1988) Meaden cites the fascinating observations by a Mr Roy Lucas, at Manor Farm, Yatesbury, Wiltshire, on 16 June 1988. At 0715 GMT Mr Lucas was enclosed in a tractor cab, cutting grass verges on a track 3 kms to the west of the famous village of Avebury (which is completely enclosed within an ancient stone circle). The air was humid and the sky was overcast.

"Looking across the field of winter wheat to the east ... he suddenly noticed at a distance of 80 metres what he took to be a large puff of white 'bonfire smoke' rising to 15 feet (5m) maximum height. The outer part of this 'smoke' was scarcely rotating but the middle part, which was too thick to see through, was spinning rapidly. In a couple of seconds the effect had ended; the spinning central column had gone and the residual 'smoke' or cloud of fog drifted gently in the prevailing light north-east wind towards the south-west and dissolved after going several yards. He used the word smoke out of convenience but said that the effect was more likely caused by water vapour, cloud droplets or fog. He further emphasised the swiftness of the appearance and disappearance of the phenomenon. It had arrived suddenly like 'smoke from a distant cannon' or just as if 'a smoke-filled or fog-filled balloon had suddenly burst'. ... He made the further point that the spinning column might have been very much longer than he could judge, for he realised that the only part he could see was the part rendered visible by the smoke or fog. The diameter of the cloud was about the same as its height, viz 4 or 5 metres."

Meaden continues "A similar occurrence a few seconds later in practically the same place, and five minutes later there was a repeat performance, but this time beyond the field boundary... . From the elevation of his tractor Mr Lucas looked for signs of marks in the crop, but he could not see any. Nevertheless, regarding the sighting he added "After seeing what I saw I am quite convinced that this is what caused the circles. "

A few hours later, the farm manager discovered two single circles (diameters 8 and 9 metres) in a barley field only 350 metres to the west. Overall, 10 circles appeared at this location during the period preceding 29 June 1988. All of these circles lay in a zone lying to the south and south west of Windmill Hill - a 30 metre high obstacle which was "sufficient ... to provoke turbulence with vorticity in its lee as the wind flowed south-westwards above it."

Meaden believes that "What Mr Lucas observed were the lower ends of spinning columnar vortices made visible by the condensation of water droplets in the cores as a result of reduced air pressure. The visible height of the spinning fog-cloud ... corresponds to the depth of the nearly-saturated air in the inversion (layer)."

(d) In an article published in the news magazine Now! 29 August 1980, well known UFO author Arthur Shuttlewood described his observation of a circle formation appearing before a number of sky-watchers:-

"One evening there were about 50 of us sky-watching along the Salisbury Road. Suddenly, the grass began to sway before our eyes and laid itself flat in a clockwise spiral, just like the opening of a lady's fan. A perfect circle was completed in less than half a minute, all the time accompanied by a high-pitched humming sound. It was still there the next day."

This account is significant because dust-whirlwinds frequently produce humming sounds, these indicate the presence of coronal and electrical discharges.

(e) In "The Circles Effect and its Mysteries" Meaden cites the following account by a Mr Barnes, which probably took place on Saturday 3 July 1982:-

"I have been meaning to write to you for some time on the subject of corn circles. I was fortunate enough to see one of these form in a field at Westbury. It happened just before six in the evening after a thunderstorm earlier that afternoon; in fact it was still raining slightly.

My attention was first drawn to a 'wave' coming through the heads of the cereal crop in a straight line at steady speed; I have since worked this out to be about fifty miles an hour. The agency, though invisible, behaved like a solid object throughout and did not show any fluid tendencies, ie no variation in speed, line or strength. There was no visual aberration either in front, above or below the advancing line. After crossing the field in a shallow arc the 'line' dropped to a position about 1 o'clock and radially described a circle 75 feet radius in about four seconds. The agency then disappeared."

It is interesting to note that the witness observed the circle being created in what he estimated to be only four seconds. This, of course, accounts for why the vortex did not produce a trail of damage across the field - because in the time available the vortex remained relatively motionless. It also accounts for the dearth of witnesses to circle-forming events, because like the Bell account (above) the incident lasted for so little time it could easily have gone unobserved.

6.6. Similarities between Characteristics of Circles and Characteristics of Vortices

(a) The Coincidence of the Spiral Patterns

Vortices appearing over water surfaces (and dusty deserts) frequently leave spiral patterns on the surface because of the need for a constant supply of air at the base of the (ascending) vortex, which flows in from all directions. These vortex-produced patterns clearly mimick the patterns found in the cornfield circles. The coincidence cannot be accidental.

"Dust-devils, or rotating columns of sand travelling rapidly across open spaces, are not uncommon objects to desert travellers. Their height and breadth is often very considerable and the evidence of the eddies causing them very great. The smallest of this type I have seen was only 5 foot high, that is, the visible column of sand, and less than a foot in diameter. It passed so close to me that it was easy to see its narrow cycloidal path marked on the sand, which was deposited and lifted as the eddy travelled on at not less than 15 mph, although the wind was actually very light." (See "Tornados, Dark Days, Anomalous Precipitation and Related Weather Phenomena" W.R. Corliss 1983 p 173).

(b) The Ability of Some Vortices to Remain Stationary

Vortices can occasionally remain stationary (presumably when the pressure wind is very low, and when topographical obstructions impede horizontal movement). Holford cites a vortex remaining in the same North Dakota field for 45 minutes whilst Meaden's Journal of Meteorology (Vol 13 no 132) carries a photograph of a standing eddy vortex, formed in the lee of a hill at Carron Reservoir, Scotland, in May 1983. The stationary vortex was only visible because of the very humid conditions and - according to the witness' testimony - the vortex was only visible for a matter of seconds before moving upwards into the base of the cloud and disappearing from view.

Perhaps the most interesting account of a stationary vortex is that by Capes, who, whilst walking in the Egyptian desert, recounts

"Hearing a swishing sound behind me, I turned and observed a large revolving ring of sand less than a foot high approaching me slowly. It stopped a few feet away and the ring, containing sand and small pieces of vegetable debris in a sheet less than one inch thick, revolved rapidly around a circle of about 12 foot diameter while the axis remained stationary. It then moved slowly around me after remaining in one spot for at least thirty seconds, and slowly died down." (See W.R. Corliss *ibid.* p 169)

(c) The Existence of a Precisely Defined Vortex Funnel

The vast majority of vortex events seem to involve revolving columns of air which are clearly surrounded by zones of severe atmospheric turbulence. However, a small number of close-up photographs of vortices reveal a precisely defined funnel at the centre of the vortex.

This characteristic suggests that under certain conditions vortices might be capable of creating precisely defined circles should they come into contact with pliable arable crops at ground level. This possibility is enhanced by apparently numerous eye witness accounts of vortex events when very small geographical areas were affected; eg

"Suddenly a dull sound was heard, rather like the rumble of a carriage drawn by a horse at full gallop, then a whirlwind of irresistible force was formed, which suddenly and instantaneously carried off the roof of the house, and dispersed it in all directions. This whirlwind was neither preceeded nor followed by any rain. It is also extraordinary that this house alone was affected, and at ten metres distance no disturbance of any kind was experienced." (See Corliss ibid. p 167)

"Two men were in a field when they heard a sudden report, like that of a cannon. They turned just in time to see a cloud of stones flying upward from a spot in a field. Surprised beyond measure they examined the spot, which was circular and about 16 feet across, but there was no sign of an eruption nor anything to indicate the fall of a heavy body there. The ground was simply swept clean." (See Corliss ibid. p 168).

Furthermore, the account by Roy Lucas supports a vortex model in which a rapidly rotating well-defined inner funnel could be surrounded by a less well-defined slowly rotating outer zone (which might mask the funnel itself). Meaden suggests that the reason why the plasma vortex is precisely defined is due to surface tension between areas of stable and unstable air. For these reasons we do not consider the very precise definition of the cornfield circles to be a factor which automatically excludes a natural causing agent.

(d) The Coincidence of the Sheath Effects

Waterspouts (which are minor vortices forming over water surfaces) occasionally exhibit (up to three) very thin outer sheaths which are concentric with the central funnel (see Figure 6, page 77). These sheaths can ascend and descend at will during the vortex event and their existence was verified by laser probes of waterspouts off the coast of Florida during 1976. Significantly, sheaths always rotate in sequence (eg clockwise then anti-clockwise then clockwise) to maintain their conservation of momentum, and they are normally positioned very close to the parent funnel.

All known ringed circle formations display similar contra-rotations (with the exception of the hoaxed formation at Cheesefoot in 1986) and the positioning and dimensions of these rings mirror the positioning and dimensions of those sheaths reported to accompany some waterspouts.

"One (water)sput exhibited a strange pulsating outer sheath of condensation, which rotated around the better-defined inner funnel and then moved upward into the base of the cloud." (See Holford (1977) p 190-99)

"So far I have described nothing unusual, but the following was quite new to me and seemed of great interest. Surrounding the central core, but separated from it by a clear narrow space, was a sheath, the lower end of which faded away some distance above the water. The profile of this sheath was undulating, it being thicker in some places than in others. A curious point is that this sheath seemed to pulsate rhythmically, but I could not say whether the appearance of the pulsation might not have been an illusion caused by waves travelling up its outer surface. The pulsation gave an uncanny suggestion of a live thing ... " (See Corliss *ibid.* p 155).

As Meaden himself admits, the process by which outer sheaths are created and maintained is at present quite obscure, however, the existence of glowing waterspout sheaths suggests that the flow of charged particles in the outer sheath must be an intrinsic part of that process. All the available observational data clearly suggests that a thin layer of counter-rotating material surrounds many atmospheric vortices. It seems trite to ignore such strong evidence for a vortex-related explanation in the light of such evidence.

(e) The Ability of Vortices to form in Multiples

Vortices frequently form in multiples and may be capable of forming in complex geometrical patterns, eg

"What was unusual were the numerous distinct fingers of columns of vapour swirling out of the steam fog layer directly into the over-lying cumulous clouds. It is estimated that they were 50-200 metres in diameter, travelled more or less with the wind, and showed a slow but distinct rotation (mostly cyclonic) of up to several rotations per minute. The steam devils tended to be rather short-lived, the longest surviving perhaps for 3 or 4 minutes. An even more interesting view ... was taken from a commercial airliner on January 30th 1971 ... visible are small cumulous plus the steam devils and a highly patterned effect on the surface steam fog. It definitely appears that there were quasi-hexagonal cells elongated along the surface wind direction, the largest steam devils being present at the vertexes of the hexagons." (See Corliss *ibid* p 170)

*A remarkable find in summer 1987:-
One small area produced twelve of
the circles in four differing
events...a quintuplet (lower rt)
...a triplet (upper lft) and two
sets of doublets, one partially
superimposed on the other.*

(Photo: Dr Terence Meaden)



(f) The Equal Distributions of the Swirl Directions

If the vortex model proves to be correct, it may be significant that there seems to be no particular bias towards clockwise or anti-clockwise swirl patterns. During 1987 Meaden inspected 66 different circles (NOT formations) and of these 30 exhibited clockwise swirls and 36 exhibited anti-clockwise swirls. Major vortices obey Bury Ballot's Law - which states that vortices in the northern hemisphere rotate in an anti-clockwise direction. Minor vortices by contrast rotate in either direction with equal probability.

6.7 Other Supporting Evidence

Meaden cites a number of interesting cases which seem to strengthen his claim that vortices are creating circles. These accounts include

- encounters by witnesses with very strong down-currents of air (ie vortices) at locations where circles consistently appear;
- a report from Bolnhurst, Bedfordshire (c 1968) when two witnesses heard a typical vortex buzzing sound prior to the discovery of a newly formed precisely-defined circle in an adjacent bean field;
- a report by a Mr L. Sharp of Norton Bavant, Wiltshire, who heard a whirlwind striking his garage prior to the discovery of two freshly formed circles in a nearby field;
- a case from St Souplet, France (1963 or 1964) when a witness was awakened by 'a violent report' and then observed a huge red light 'take off' from her garden, leaving behind a 3 metre circle in a bed of spinach;
- reports of spinning balls of light making identical sounds to those known to be produced by vortices;
- car stop cases occurring in the general vicinity of locations known to produce circles.

6.8 Overview

The evidence Meaden has amassed challenges our pre-conceptions about the world about us and demands that we open our eyes to what new tricks nature may be playing with us. His theory is to date the only one which offers a scientifically testable hypothesis to account for the crop circles. It rests or falls on one issue and one issue alone. Can atmospheric vortices do all the things they need to do to be able to create the intricate geometrical patterns we have been discovering in our cereal crops in Southern England over the past few years?

We will next assess his evidence and look at its strengths and its weaknesses.

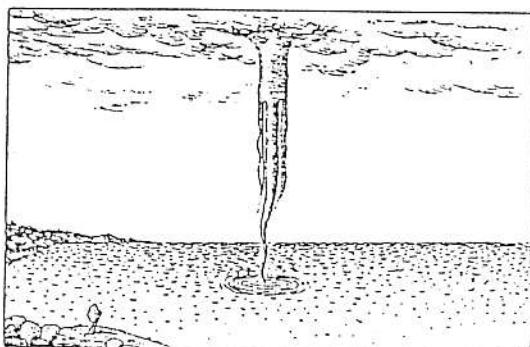


Fig 6:

Example of a Double Walled Waterspout over Lake Victoria
(Taken from Corliss, 1983)

Strengths of the Vortex Theory

We support the likely validity of the Vortex Theory of Circle Formation for the following reasons:-

6.9. The Eye Witness Accounts of Vortices Creating Circles:-

We find it very difficult indeed to dismiss the alleged "eye witness accounts" of vortices creating circles cited in section 6.5. There seems to be no good reason to suspect deliberate fabrication by these witnesses and they have not (to our knowledge) made financial gain by reporting their experiences to the press or TV. Only three possibilities seem to exist to account for these observations,

- (a) all (or some of) the witnesses are lying;
- (b) all (or some of) the witnesses were mistaken, and actually observed a phenomenon creating a circle which looks like a vortex but which is, in fact, something quite different; or
- (c) all (or some of) the witnesses observed atmospheric vortices creating cornfield circles.

We begin our discussion of these cases by noting that for more than forty years UFOlogists have been promoting "eye witness accounts" of unidentified flying objects as observations of "unrecognised phenomena" without being overly concerned for the reliability and credibility of individual cases. Now that eye witness accounts of vortices creating circles have been produced, UFOlogists have suddenly become pagans of virtue, and often seek all kinds of reasons to dismiss and ridicule these observers (whose welfare UFOlogists frequently claim to be protecting). This seems to be because certain UFOlogists prefer to support a more exotic solution to the mystery of the circles - when common sense dictates that we must give the vortex theory credence unless it is shown to be inadequate.

We admit that these accounts are not entirely free from criticism, and we accept that it would have been very nice if Melvyn Bell, Arthur Shuttlewood and John Lewis ... had been able to immediately examine the "circles" they claim to have observed being created. It would have also been useful for them to have photographed and measured the resulting disturbances. In that way researchers could then subsequently become convinced that these witnesses had indeed observed the same process that generates identical circles to those being discussed in this report (although, of course, a single process may create more than one type of disturbance). These witnesses failed to do any of these things. They did so because they are simply human beings who were suddenly involved in an unexpected observation which took them completely by surprise. They were not robots or recording instruments.

Because of these perceived 'failings', some UFOlogists are trying to suggest that these important eyewitness observations involve something utterly different from the agency behind the Wessex cornfield circles; although precisely what that something might be is never made clear. This seems to be a desperate attempt by some people to dismiss evidence which clearly supports a meteorological solution to the mystery of the circles in order to preserve other, more exotic, explanations.

Clearly UFOlogists must learn to be a little more consistent in the way in which they deal with alleged "eye witness accounts" of anomalous phenomena. On the one hand, it is true that these accounts leave a little to be desired as bona fide observations of vortices creating circles. We too would like to know more about the resultant circles which these witnesses claimed to have seen in generation, and we too would like there to be many more accounts, from a much wider geographical location and a longer period, all offered to us by witnesses with PhDs and 20/20 vision.

On the other hand, we see no reason to dismiss the accounts we do have out-of-hand and until somebody can account for these observations with reference to other (non vortex-related) phenomena, we stand by our claim that these accounts "hold up".

It seems very difficult for the objective analyst to regard these observations as evidence of vortices creating circles, whilst at the same time agreeing that these particular circles are different from those being discovered and examined in the so-called "Wessex Corridor". This looks suspiciously like a device to manipulate unwelcome evidence, where the only circles considered to be the "real ones" are those which go unobserved.

It would be a coincidence of quite staggering proportions if one ("intelligent") phenomenon was producing geometrically-defined and layered cropfield circles in the "Wessex Corridor", whilst another (quite independent) phenomenon was creating rough circular patches of damage being observed by these allegedly misguided eyewitnesses. It would also be a coincidence of quite unimaginable proportions that both the meteorologically caused circles and the non meteorological circles have both suddenly been "discovered" by Science during the past decade or so. Surely one should preceed the other ?

6.10 The Sheath Effects

We believe that Meaden's theory is particularly successful in accounting for the existence of the outer rings surrounding some of the circle formations. The remarkable similarity between characteristics of the ringed circles and the characteristics of waterspout sheaths seems too strong to be a mere coincidence. Why is it that the positioning and dimensions of the outer rings mirrors those found in vortex sheaths ? Why is it that both sheaths and rings contra rotate ? Why is it that both circles and waterspouts display a sinuating wave-like effect in the outer rings (sheaths) ? For the Vortex theory to be wrong, these similarities would again presumably be another major coincidence.

Meaden suggests that the outer rings are "ionized race-tracks", in which electrically charged particles are induced by the strong electromagnetic charge present in the parent vortex. His theory successfully explains why the direction of spin in the ring is opposite to that in the inner circle and it also accounts for why only the larger circles produce rings, because the charges present within the smaller vortices are not strong enough to induce powerful currents beyond the vortex itself. The sheath effects also account for the existence of contra-rotation within some circles, because a sheath effect can surround a contracting vortex such that it produces contra-rotation in the outer zone of an already defined (much larger) circle.

6.11 The Clustering Effect

The clustering of circles about features known to induce vortex formation again suggests very strongly that some previously unrecognised type of vortex mechanism is creating the phenomenon (see Professor John Snow's observations in Chapter 10). Those UFOlogists who suggest other, more sensational explanations for the phenomenon, have yet to explain why so many circles are found at hillslope sites like Cheesefoot Head, Cley Hill and Westbury. Surely this recurrent factor cannot be accidental ?

6.12 The Lack of Damage to the Affected Crop

Air pressure seems to be an ideal force to allow the affected corn to remain undamaged. As we observed in Chapters 3 and 4, all mechanical forces seem to damage the affected crop, whilst failing to reproduce the observed characteristics (layering, banding, swirl pattern etc). Meaden's theory successfully accounts for the lack of damage and makes use of a common mechanism rather than relying upon unproven, unverified forces (eg geomagnetic forces associated with the hole in the ozone layer).

6.13. Associated U.F.O. Reports

Following on from the accounts of vortices known to be accompanied by unusual atmospheric discharges, strange balls of light, and unusual lightning effects, the Vortex Theory successfully accounts for the two or three UFO reports which seem to be relatively reliable accounts of unusual phenomena seen in the general location of newly formed or forming circles.

Meaden suggests that the Silbury Hill case can be interpreted as a self-illuminating vortex tube acting as a conducting path between a charged cloud and the ground. There seems to be nothing in this interpretation of the evidence which breaks substantially with what is already well established in the meteorological literature on vortices, although elsewhere we suggest as a precaution an alternative (mundane) explanation for this event. There seems to be no good reason to assume that this particular report represents an encounter with some form of "intelligent" phenomenon, as some sources have suggested, and it is possible that the alleged "psychic" effects may - in time - be accounted for by reference to unusual electro-magnetic effects.

6.14. The Scientific Method

We emphasise that Meaden's highly original Vortex Theory relies upon the proven Scientific Method, ie Meaden has successfully matched (often unusual) characteristics of vortices with reliable, well-documented characteristics of the circles. We have seen no evidence whatsoever that the known features of the hole in the ozone layer have been matched with characteristics of the circles, or that hypothetical properties of "intelligently controlled" U.F.O.s have been matched with characteristics of the circles. We reject these theories as naive, out-dated and totally unnecessary when other, more scientific hypotheses exist in the form of a working, testable model.

It is simply not tenable to use one unexplained phenomenon (the hole in the ozone layer) to account for another unexplained phenomenon (the circles), and as responsible UFOlogists we will keep on saying this because we regard the principle to be of major importance.

6.15. The Existence of Similar Phenomena from Other Geographical Locations over a relatively Long Period of Time

The Vortex Theory seems to be the most realistic concept yet proposed to account for the cornfield circles, and we contend that by proposing a natural explanation Meaden successfully accounts for the international distribution of (similar) circles and the historical reports of circles dating back some seven decades in the UK. The theory predicts that circles will appear whenever arable crop, or similar botanical structures, are nearing maturity, because pliable crop stems seem ideally suited to being permanently deformed without being damaged by the sudden descent of a column of air.

Descending atmospheric vortices have probably existed for millenia, but for reasons described more fully below, it is only during the past decade or so that (modern) crop structures have become more prone to permanently recording the presence of unusual atmospheric vortices.

We cannot accept the idea that some form of "intelligence" has been creating such intricate cropfield circles, particularly when the formations display such a remarkable similarity to those predictable patterns known to be produced by atmospheric vortices and electro-magnetic fields. We cannot believe that some form of "intelligence" has been creating cornfield circles for several decades in many countries across the world, mostly in complete ignorance of local populations, and with no apparent logic or advantage ... except to recently generate headlines in the tabloid press. It seems blindingly obvious that even if some kind of intelligent pattern were to emerge from the data at hand, the only realistic solution for such patterns would be that some kind of human intelligence was creating the phenomenon - contrary to the wild claims being made in certain quarters of the movement.

Frankly, it is our view that any open-minded and cautious student of the facts behind the circles phenomenon would have to conclude that the scientifically testable vortex theory was the primary candidate. It is infinitely superior to any supposition seeking to tie hypothetically "intelligent" UFOs with extremely weak evidence that is not even internally consistent within the UFO experience. Particularly when it appears to use desperately contrived attempts to fit such material into a barely postulated and fantastic theory that deals in imponderables and improbabilities.

Weaknesses of the Vortex Theory

6.16. Descending Atmospheric Vortices are Currently Unrecognised by Science

It is perhaps moot to point out that, with few exceptions, the concept that atmospheric vortices may descend to produce "cornfield circles" is quite novel and has yet to be accepted by established scientists. However, the phenomenon being proposed is not a totally original concept and does stem very closely from the recognised (if not completely understood) features displayed by atmospheric vortices. Therefore, whilst Dr Meaden is engaged in proposing, testing and researching a novel hypothesis of some meteorological significance, he is doing so well within the accepted boundaries of scientific principle. That it has yet to achieve total acceptance amongst his peers is perfectly understandable and reasonable considering that his theory has only been partly published prior to 1989. That it has not been rejected out-of-hand as "crazy" or "impossible" is equally noteworthy. Our best response as open minded and responsible researchers is to monitor the situation and recognise that Dr Meaden deserves the time to make his case more thorough via the evidence he is extensively accumulating.

It has been unfair and illogical of some researchers to dismiss the vortex theory as soon as they found features of the phenomenon which apparently do not fit into Meaden's developing theory. When a testable scientific model can begin to predict perhaps 80-90 % of the characteristics of an anomaly, it is irresponsible to dismiss that model because it has yet to account for outstanding features. Science rarely moves forward in mighty leaps, it takes time for theories to develop and for the issues to be debated. UFOlogists must wait for the meteorological community to evaluate what Meaden is proposing before dismissing his theory and its evidence for want of a complete explanation. We in BUFORA are quite content to wait and see how the meteorological community responds to Meaden's theory and we expect other UFOlogists to do likewise, for all the reasons discussed in Chapter 2 of this report.

6.17. The Apparent Evolving of Formation Types

During 1986, we were particularly concerned with the manner in which the reported circle formations seemed to evolve into ever more complex formations, a characteristics which did not seem consistent with a 'natural' causation. Our concern with this issue led directly to the BUFORA/TORRO Survey, and we maintain that this criticism is dealt with successfully in Chapter 8.

6.18. The Lack of a Historical Mythology Surrounding the Phenomenon

A further criticism of the Vortex Theory seems to be the lack of a strong long-term mythology surrounding the subject of the cornfield circles. It is true that most "natural" phenomena tend to acquire a folklore (eg "fairy rings"), which modern anthropologists and folklorists extensively document. We are concerned with Ralph Noyes' contention that his survey of authoritative folklore material covering many centuries of tradition (which includes books by Evans-Wentz, E.S. Hartland, Katherine Briggs, and J.G. Frazer), "failed to identify a single instance from folklore of any phenomenon which remotely resembles our recently-identified cropfield circles." We accept that if it is true that no such folklore exists, this is a major problem with promoting a meteorological explanation for the cornfield circles. Indeed, this was another reason why we carried out the BUFORA/TORRO Survey.

6.19. The Rather Sudden arrival of the Phenomenon During the early 1980s.

This issue is another major reason why some observers find it difficult to accept a 'natural' explanation for the circles. It is true that, in Southern England at least, there were relatively few reports of the phenomenon until the early 1980s, with extensive national media publicity occurring from 1983 onwards. Elsewhere, the phenomenon has hardly attracted the attention of any media sources, let alone to the extent that has occurred in Britain (where the national media is based very close to where the well publicised circles and the proven hoaxes appear). We believe there are very good reasons for this:

(a) Increased Searching by interested researchers has definitely led to a sharp rise in the number of reported formations in Britain over the past 8 years or so. For example, in 1985, only 30 circles (ie 6 quintuplet formations) are known to have appeared. By 1987, 75 circles were inspected by the Tornado & Storm Research Organisation, whilst the following summer 110 circles were logged after very extensive searches.

No group or individual is known to have been meticulously studying the phenomenon of the cropfield circles until at least 1980, whilst at least two separate groups of researchers now make extensive efforts to discover formations which would otherwise go unreported. It seems reasonable to infer from the established historical record that similar, if not identical, circles have been appearing for centuries in many countries. UFOlogical records of 'UFO nests' amply demonstrate that precedent. Yet it has only been in the last decade that the media have sensationalised the phenomenon as the marks left by visiting alien spacecraft (and so encouraged additional reports from a public who would have otherwise been disinterested in a 'weather' anomaly). We know from several cases where circles are alleged prior to 1980 that the witnesses say they dismissed them as mere artefacts of some natural process (the weather and foxes are common suggestions). This implies that an "apathy factor" was very evident in historical reports - or, to put it more simply, nobody was interested in reporting the phenomenon until (some) UFOlogists and the media made the circles look exciting and supernatural.

(b) A second factor affecting the numbers of reported formations in Britain must be changes in the surface area devoted to those arable crops apparently capable of recording the mechanism which is creating circles in Britain. If a transient vortex lies behind the phenomenon, and mature arable crops are required to record the presence of these vortices, any change in the surface area devoted to arable crops must affect the number of reported formations. The 1984 Agricultural Census indicates that there has been a 20 per cent rise in the surface area devoted to cereal crops since 1950 in the UK. All other factors being equal, this would suggest a 20 per cent increase in the number of formations being produced by a 'natural' (meteorological) causal mechanism.

(c) Of course, in the real world, "all other factors" are never equal, and we contend that the number of reported formations could also be due to differences between individual crops and their ability to record the presence of transient vortices. This is particularly so with regard to

- the length of the growing season (especially if the introduction of winter crops results in a lengthening of the period when mature arable crops are present at a time when descending vortices are shown to be more common);
- the increasing density of crop stems (which may make for a finer recording medium); previous crops may have been too coarse to accurately record the presence of vortex effects;
- the increased use of fertilisers and pesticides (some of which are known to cause lodging in cereal crops when applied excessively), which may have affected the ability of some crops to record vortex damage;

- the strength of the crop stems (ie new varieties of cereal crop tend to have longer heads to improve the yield, whilst the stems have become fatter); and

- changes in modern agricultural methods which may have made some (newly introduced) crops more vulnerable to vortex damage than other (more traditional) crops (eg the removal of hedge rows to facilitate the use of mechanisation may have resulted in a more stable layer of stratified air laying over the crop canopy).

Agricultural Census figures show that since 1950 the surface area devoted to (winter) barley has more than tripled, whilst the area devoted to oats, mixed corn and rye have all fallen significantly. If (winter) barley can be shown to be more vulnerable to vortex-induced damage than other cereal crops, this may (partly) account for the dearth of pre 1980 cropfield circles.

Table 1: The Surface Area of Cereal Crops in the United Kingdom: 1950-1983

1,000s Hectares	1950	1960	1970	1980	1983
Wheat	1,003	851	1,010	1,372	1,663
Barley	720	1,365	2,243	2,347	2,222
Oats	1,257	799	376	136	129
Mixed Corn	339	82	79	16	10
Rye	29	8	5	7	6
All Cereal Crops	3,348	3,105	3,713	3,878	4,030

We note that most of the Wessex cropfield circles appear on very thin topsoils overlying pervious chalk deposits (ie those where precipitation drains away fairly quickly). Again it seems quite possible that this may, in some way, affect the ability of Wessex cereal crops to record vortex damage when compared with cereal crops lying in other parts of the country (where chalk deposits are much rarer, and where rainfall patterns and insolation may not be comparable to that experienced by Wessex crops).

It is also important to emphasise that cereal farming in the South of England cannot necessarily be equated with farming methods in other parts of the world, and that British farming methods are amongst the most intensive in current operation anywhere. In this context it is noteworthy that the average farm size in the UK is over 60 Hectares - more than four times the average size of farms in most European nations. Since farm size and field size are strongly correlated, it seems reasonable to conclude that UK farms are much more prone to producing large areas of arable crop overlain by well stratified air than European farms, where the hedge rows may lie much closer together. This factor may well account for the relatively low numbers of circles being reported from Europe (and indeed from elsewhere). If UFOs were to blame, why would Britain be so favoured?

Clearly there are a variety of agricultural reasons why cornfield circles have suddenly become much more prevalent than during historical times, and it is quite possible that Wessex contains a greater concentration of cornfield circles because of modern agricultural factors rather than factors which seem to some UFOlogists to be of interest to an "intelligent" phenomenon. We contend that natural atmospheric vortices have always been forming in well stratified air above crops, but that agricultural factors have recently modified the ability of those crops to record the presence of transient vortices where they would otherwise go unrecorded.

Finally, we do not rule out the possibility that some climatic factor may account for the relatively high numbers of formations appearing in Southern England and the relatively recent rise in the number of reported formations. Whilst it seems trite to link the circles with the "greenhouse effect" and "the hole in the ozone layer" without any accompanying evidence (afterall, the hole in the ozone layer is located many hundreds of miles from Southern England), it is possible that (potentially resultant) small climatic fluctuations may in some way have affected the ability of the boundary layer to generate descending vortices in temperate climates. Only further research will eliminate this possibility.

6.20. The Existence of the Linear Spurs

Meaden attempts to account for the existence of linear spurs by proposing that charged particles in the outer circumference of the circle tend to cluster into 'parcels' due to centrifugal force. These 'parcels' congregate at the Kapitsa nodal sites and are then blown out by the geostrophic wind as the vortex mechanism breaks down. As Meaden himself contends, there is a great scarcity of data here, and it may be wise to await further examples before reaching a firm conclusion as to their origin. However, the two most reasonable possibilities for what may cause these anomalous features include

- a novel meteorological explanation; and
- "touching up" by hoaxers after a genuine circle appears.

The only two formations with relatively large linear spurs were the ringed circles at Childrey, Wantage 1986 (3 metres in length) and Pepperbox Hill, Whiteparish, near Salisbury 1987 (14 metres in length and set precisely between two tramlines). Meaden contends that in both cases the spur was orientated with the general wind direction at the time of formation. The Childrey spur displayed a small hole just beyond the end of the spur, which Meaden suggests was made by an animal.

We note that at Childrey, the farmer (atypically) believed that U.F.O.s were creating circles - according to his response to the TORRO/BUFORA survey - whilst the Pepperbox Hill farmer claimed to have chased hoaxers off his land when they had an incriminating length of rope with them. Both these factors are sufficiently unusual to warrant possible speculation about potential correlations.

We may have to lean towards hoaxing for these spurs, possibly through the agency of some pseudo-religious body, eg by the druids (who frequent the Stonehenge area in high Summer). The "hippy theory" was first proposed - rather tentatively - by Chris Woods, a photographer for the Daily Express, who measured and examined several dozen circle formations during the mid 1980s. He was never able to establish any *prima facie* evidence.

6.21. The complexity of the circles

One of the greatest difficulties in accepting a meteorological solution to the circles phenomenon is the extraordinary complexity of the patterns that are being generated. Dr Meaden has had to modify and develop his theory several times to account for newly reported circle types and some sceptics have suggested that this is not as persuasive as if he could predict in advance any new formations before they are discovered.

It is true that Dr Meaden has done this to a limited extent. But it is equally true that certain aspects of the circles phenomenon appear difficult to account for without resorting to extensive mathematics that may look as if it is contrived.

Also, whilst it may be that reporting patterns explain the apparent increasing complexity and morphology of the circles this factor is just as explicable in artificial terms. One can interpret the evidence as an unfolding 'intelligent' plan, possibly dictating some sort of message. Indeed, there have been speculations (barely serious we presume!) that there is a "key" to the circles akin to Morse code and that we might ultimately unravel some horrendous secret behind these 'alien' messages.

We regard these ideas as pure (and unjustifiably wild) speculation. However, the appearance of what can look like logic, order and pattern in the circles phenomenon is an undoubtedly problem. It may be a mere consequence of the sociology of reporting. On the other hand it is wrong not to take this difficulty into account.

Furthermore, if - as the vortex theory would imply - highly complex multiple patterns have been occurring for many years but have not been reported until recently, how do we account for this? It seems reasonable that single circles might have been dismissed as mundane phenomena (as they were at both Waverton and Earl Shilton), but could every single complex and geometric formation appearing in the past have provoked not a tiny flicker of interest amongst local media sources? Possibly, the real culprit is the rise in television and radio spreading news far more rapidly, and the development of the UFO Myth, which has obscured a number of fascinating anomalies because of its obsession with wildly exciting interpretations of unusual phenomena. Could it be that this Myth and the advent of TV and radio have turned the circles into a big mystery when twenty or thirty years ago the same thing would have remained just an item in the local paper? Perhaps extensive historical searches of town or village newspapers in circle rich areas will reveal some interesting answers. We look forward to hearing from readers who may have the tenacity to carry out this task.

CHAPTER (7): The BUFORA/TORRO Survey1. Reasons for Carrying Out the Survey

During late 1986 Jenny Randles and myself were becoming increasingly concerned with the problem of hoaxing and the lack of accurate, meaningful data available to us to allow a proper evaluation of the phenomenon. We were particularly concerned with the following issues:-

(a) whether or not the apparent evolving of formation types during the previous five to six years represented a true characteristic of the phenomenon, or whether this merely reflected reporting bias by the media to concentrate on the more exciting formation types (eg the quintuplets) at the expense of the less exciting formations (eg the singles);

(b) we wanted to know how many formations were appearing each year, how many types of formation were appearing, and what proportion of formations were being reported by the media; and

(c) we were particularly interested in the beliefs of the landowners who were most familiar with the phenomenon and whether or not any farmers had directly observed the mechanism responsible for creating the circles. If anyone knew what was responsible for the phenomenon or had witnessed an actual circle formation, surely the landowners should know?

We noted with concern that every summer new types of formation were being reported by the British media, beginning with the first accounts of triplets in 1981, the first accounts of quintuplets in 1985 and then ringed circles making their first appearance during 1986. We were very concerned that the appearance of these more complex circle patterns coincided suspiciously with the emergence of the phenomenon as a subject worthy of national and inter-national publicity. Could this mean that the long-established single circles were caused by a 'natural' (possibly meteorological) phenomenon, whilst the more complex geometrical patterns merely represented media or media-inspired hoaxes?

Two factors supported this conclusion. Firstly, we knew of no accounts of the more complex geometrical formations being discovered prior to 1981, the year in which (at first only local) media interest in the phenomenon took off. And secondly, we noted that two known or suspected hoaxed circles (Westbury 1983 and Alfriston 1985) were both examples of very complex geometrical patterns (quintuplets). This suggested that unless accounts of pre 1981 triplets and quintuplets could be discovered, the more complex formations may well be media hoaxes whilst the single circles were more likely to be 'natural' or meteorological in origin.

To test for the lack of pre 1981 complex formations we searched through over 150 editions of the nearest local newspaper to Cheesefoot Head (the Winchester based 'Hampshire Chronicle') for every weekly issue between May and September for the years 1975-79 and for 1973 (which just happened to be on the reader).

Not one of these issues carried a single item of news about the "mystery circles", even though we knew from first-hand accounts that circles had definitely appeared in the Cheesefoot Head 'punchbowl' - only 4 miles from the newspaper's head office - at times throughout this period ! The implication behind this discovery was that we needed to extend our search for pre 1981 complex formations to the landowners themselves. It was for this reason that the British UFO Research Association and the Tornado & Storm Research Organisation carried out the first quantitative survey of the phenomenon during 1987.

2. Methodology

The objectives of the BUFORA/TORRO Survey were

- to provide (if they existed) verifiable accounts of triplet, quintuplet and ringed circles prior to 1981, the year in which the phenomenon first achieved publicity in the UK;
- to provide an accurate estimate and confidence interval for the average number of cereal acres per circle formation per year;
- to provide an estimate of the proportion of cereal farmers who had reported or would report a circle formation to an investigative agency (eg the police, the media, etc); and
- to assess the beliefs of the sampled farmers as to the perceived cause of the phenomenon.

These objectives were best met by carrying out a random sample of cereal farms within a conveniently referenced area that was known to have produced circle formations, whilst the first survey objective was better met by carrying out a complimentary Sub Survey at locations known to have produced circles but which had not already formed part of the Main Survey.

The Main (random) Survey was carried out in the English County of Hampshire, where many formations had been reported during the previous decade or so; whilst the (quota) Sub Survey was carried out in parts of the English Counties of Hampshire, Oxfordshire, Wiltshire, Berkshire and Sussex in Southern England.

A survey questionnaire was designed along with a letter of introduction from the Tornado & Storm Research Organisation and funding was provided by both TORRO and BUFORA during December 1986 to carry out the survey. Because circles were believed to only appear in cereal crops (a belief which we now know to be untrue), a complex method of only selecting cereal farms for the Main Survey was carried out using the 1984 Agricultural Census returns for Hampshire such that questionnaires were only sent to farms which were located in parishes where a high proportion of the agricultural area was known to be cultivated in cereal crops during 1984. 381 questionnaires were posted during January and February 1987 and 134 were returned (35%). Of these responses 44 (33%) were returned by non cereal farmers, thus reducing the number of valid questionnaires to 90. These represented 60 Main Survey Respondents and 30 Sub Survey Respondents.

Since the smallest professional sample surveys usually operate on sample sizes of at least 500 this greatly reduced the ease with which proper inferential statistics could be applied to the survey results; nevertheless, it is our belief that the application of objective survey techniques should be an intrinsic part of the correct approach to the proper study of anomalous phenomena.

3. Survey Results

(a) Frequency of Occurrence

The 60 Main Survey respondents reported only four circle formations over a reporting period of 6 years. This suggested that about 1 % of cereal farms experience circle formations during any one year. However, because the surveyed farms were, on average, five times larger than the average cereal farm size in England & Wales (273 Hectares compared with 50 Hectares), this estimate was discarded in preference to more meaningful estimates based on the average number of (cereal) hectares per circle formation per year. This latter estimate produced estimates of one circle formation every 24,600 Hectares per year (or one formation for every 246 square kilometers per year!) - an estimate which demonstrates just how rare the cornfield circles really are.

To interpret this estimate, two different situations were possible:-

1. If circles were caused by a mechanism which only appears because cereal crop is present, then this former estimate is applicable.
2. If, alternatively, the circles are created by a mechanism which can appear anywhere, and cereal crop is NOT required to actually produce the circle, then an estimate based upon the entire sampled Agricultural area (rather than the cereal area) must be used.

This latter estimate works out at one circle formation every 34,850 Hectares per year, or one formation for every 348 square kilometers per year, and would be used if a meteorological explanation was proven to account for the phenomenon.

The accuracy of these estimates depends on many technical assumptions which I can describe to interested readers on request and they are subject to very large confidence intervals due to the relatively small sample size of the survey; however, if we use the latter Agricultural Estimate the projected number of circle formations in England and Wales every year is approximately 100, whilst the number of Causal Mechanisms is approximately 410 - both far higher than was previously thought.

(b) The Farmer's Beliefs

This was by far the most interesting part of the survey in which we asked farmers to Agree or Disagree with three proposed explanations for the cornfield circles - Hoaxing, The Weather, and U.F.O.s.

Only 31 % of the farmers responded to this question - presumably because they held no strong opinions about the cause of the phenomenon - and a higher proportion of the Sub Survey Respondents (40 %) expressed a positive opinion (Agreeing or Disagreeing with a suggested explanation) about likely causes of the phenomenon than the Main Survey Respondents (26 %).

A second finding was that the survey respondents were least willing to pass a positive judgement about U.F.O.s (20 %) and more willing to express an opinion about The Weather (31 %) and Hoaxers (41 %). Overall, statistically significantly higher proportions of the farmers agreed with Hoaxing and The Weather compared with U.F.O.s (Table 2), whilst there was no significant difference between the proportions agreeing with the Weather and the proportion agreeing with Hoaxing for both Main and Sub Surveys respondents combined. These findings were true when the "Don't Knows" and Non Respondents were both included and excluded, thus implying that in general cereal farmers in Hampshire were more likely to support Hoaxing and The Weather than U.F.O.s, as likely explanations for the circles.

Table 2: Numbers and Proportions of All Survey Respondents to Question 7:

	Hoaxers	The Weather	U.F.O.s
Agreeing	29	19	3
Disagreeing	8	9	15
"Don't Know"	18	15	16
No Response	35	47	56
Proportions INCLUDING Non Respondents			
Agreeing	32	21	3
Disagreeing	9	10	17
No Judgement Made	59	69	80
Proportions EXCLUDING Non Respondents			
Agreeing	78	68	17
Disagreeing	22	32	83

If we examine the responses of the 11 farmers who reported circle formations appearing on their land, 6 agreed with Hoaxing whilst none disagreed (5 didn't respond); 3 agreed with The Weather whilst 3 disagreed (5 didn't respond); whilst only 1 respondent agreed with U.F.O.s and 1 disagreed (ie 9 failed to respond). With such a low response rate it is difficult to draw valid conclusions from this sub sample; however, it seems clear that Hoaxing gains greatest credibility amongst those farmers actually experiencing the phenomenon on their land.

Only very few alternative explanations were offered to those suggested on the Questionnaire, but 17 farmers did add their own suggestions, namely Helicopters (7), Disease or Bird Damage (3), Soil Fertility or Ancient Settlements (2), the Army or Ministry of Defence (2), Quasi-Religious Hoaxers (1), Gravitational Forces (1) and Foxes (1).

All these findings suggest that no consensus of opinion exists amongst the landowners as to the likely cause of the phenomenon. The fact that such a low proportion responded to this question suggests that the phenomenon is of little interest amongst the landowners concerned, whilst the suggestion that U.F.O.s are creating the phenomenon seems to gain little, if any, credence.

(c) Reporting

Only two of the eleven Main and Sub Survey Respondents who had actually discovered circle formations on their land had ever reported their discoveries to investigative agencies. These two respondents represented only one fifth of the respondents and only one tenth of the formations. This finding reinforced our suspicion that a great many circle formations were appearing but going unreported (for fear of an invasion by circles researchers, the media and members of the public). This tends to support the Main Survey estimates that perhaps a hundred formations a year are appearing in England and Wales (although less than a dozen seem to receive any publicity).

(d) Formation Types Reported

Table 3 (see page 93) tabulates the 19 formations reported by the eleven survey respondents reporting formations, whilst Table 4 (also page 93) tabulates those formations which were unknown prior to the survey. Altogether 13 (68 %) of the reported formations were unknown prior to the survey whilst two of the formation types (the triangular triplet and the regular quadruplet) were unknown prior to the survey.

These findings again suggest that increased searching will continue to produce more and more formation types, and that our knowledge of the phenomenon continues to be incomplete.

(e) The Apparent Evolving of Formation Types

Here the survey failed to uncover reports of pre 1981 complex formations (triplets, quintuplets and ringed circles); however, this failure has been superceded by the discovery of several pre 1981 complex formations (including a quintuplet at Headbourne Worthy in 1978), and by the discovery of the two new formation types (the triangular triplet and the regular quadruplet), which could both be interpreted as complex formations which for various reasons failed to attract media attention.

In retrospect it seems almost certain that media bias to only report the most sensational, accessible formations resulted in the apparent evolving of formation types.

From these results we are satisfied that criticism of any natural explanation based on such an apparent pattern of escalation, said to imply an 'intelligence' at work, is, in fact, unwarranted (1987 for example produced a whole range of media-reported formations, including the more frequent singles as well as the more unusual quintuplets and ringed circles).

4. Survey Conclusions

We recognise that because the survey examined only 90 cereal farms, its final estimates are subject to very large confidence intervals; however, what is important is that we tried to test for a 'natural' theory by the application of standard scientific procedures instead of simply dismissing the Vortex Theory out of hand or jumping prematurely to other exotic conclusions. We note that the survey failed to produce any evidence whatsoever that ("intelligently controlled") U.F.O.s were creating the circles. Not one farmer reported the sighting of an unidentified object that could in any sense even have the potential to be linked with the reported circle formations. On the other hand, evidence was produced which supported our contention that either Hoaxing and/or a rare meteorological phenomenon may be responsible for the cornfield circles.

If U.F.O.s really are creating the circles, why did the survey fail to produce eye witness accounts of these U.F.O.s creating circles? Why was there significantly higher support amongst the sampled landowners for Hoaxing and The Weather instead of the U.F.O. Theory? Why did only 1 of the landowners actually experiencing circles agree that U.F.O.s could be "the most likely explanation"?

The survey estimates imply that very many circle formations are going unreported every summer, and that new types of formation may yet be discovered. The results clearly suggest that a rare natural phenomenon could be creating the circles and that support for other, more exotic solutions lack credibility amongst Hampshire cereal farmers in general.

The BUFORA / TORRO survey was an important step forward, not merely in terms of the information that it supplied about the circles phenomenon, but as a demonstration of how serious UFO research groups can coordinate their work with mainstream scientific research institutes. We hope that it will be indicative of more joint ventures in the future. It certainly should give a signal to the UFO movement, illustrating just what can be achieved when our common objective - to produce responsible new data of a scientific nature - is born in mind.

Numbers of Formations Reported by All Respondents

	BEFORE 1981	1981-85	1986
●	3	5	
●●	2	1	
●●●	1	1	
●●●		1	
●●●●		3	
●●●●●			1
○			1

Table 3:

Results of the
BUFORA / TORRO
surveyNumber of previously
unknown formations

Table 4:

	BEFORE 1981	1981-85	1986
●	3	4	
●●	2	1	
●●●	1	1	
●●●		1	

CHAPTER (8): The London Debates

BUFORA has always believed that part of its responsibility is to keep the public informed. The current status of research into the circles phenomenon is something we have a duty to report, hence this book and its predecessor in 1986. To fulfill this role two public seminars have been held at the London Business School near Regents Park. They were open to anyone interested in the phenomenon to come along and debate the issues.

The second seminar was on 6 June 1987 and had a capacity audience. It was geared towards a presentation by Paul Fuller and Dr Terence Meaden of the work that was then being undertaken as a joint research project between BUFORA and the TORRO. It also offered aerial video film of the circles, allowing a then unique 'birds eye' perspective for many interested parties.

However, it was the first of these seminars, held in conjunction with the publication of 'Mystery of the Circles', which was of greatest public significance. This was held on 14 July 1986, just a week after the circles were first reported that summer. Considerable effort was expended to invite journalists from all responsible media sources and to ensure that all shades of opinion were presented with a platform to make their case.

This freedom of speech is considered an important principle by BUFORA and it is unfortunate that other sources examining the question of these mystery circles have not always followed this lead.

Be that as it may, the July 1986 seminar was a very successful venture. In fact, most journalists did not accept the invitation to participate. Despite numerous promises from responsible newspapers (who had already written, or were later to write, silly, uninformed pieces on the subject) most chose to ignore this single public opportunity to spend an evening thrashing out the questions and the possible solutions.

However, the few reporters who did attend were joined by approaching 100 members of the public and all the main serious researchers.

I introduced proceedings by explaining why BUFORA was associated with the circles when we believed them not to be caused by UFOs. A look at some of the questions set by the mystery was then followed by the evening's first 'poll'. Members of the audience were invited to propose explanations and vote for those which they felt were most likely to apply.

The most interesting outcome of this poll was that only a handful of people felt there were grounds to favour ANY hypothesis; although several did comment that UFOs may well be involved owing to the symmetry and complexity of the patterns on display.

Paul Fuller next carefully set out the characteristics of the circles with ample visual illustrations, including those provided by Chris Wood - a photographer in attendance from the Daily Express who had several years involvement in the subject. The Daily Telegraph had also kindly loaned some first class aerial photographs taken the week before and showing the latest crop of circles near Winchester.

Paul Fuller then introduced the various theories that were exercising the imagination of researchers in an effort to understand the mystery. With substantial feedback from other participants many of these were quickly ruled out of all consideration.

Chris Wood offered the fruits of his years of detailed photographic analysis at circle sites, noting the variety and inconsistency and discussing the theories that he considered were still in the running (effectively UFO/force fields, wind effects, hoaxes and the results of ceremonial worship by the Druids).

Pat Delgado, there with other FSR associates, described the experiments he had conducted into methods of hoaxing circles, demonstrating how difficult this was and showing some of the characteristic tell-tale signs that inevitably result. He also added his own thoughts about energy fields that could be emanating from the earth in the area where circles result.

Dr Terence Meaden was able to summarise his research into wind vortices and answer tricky questions that were bothering the audience. How could these create such artificial looking marks? What created the complex patterns? His photographs and diagrams of multiple funnel tornadoes persuaded some delegates.

I was able to describe the attitude I obtained from the London Weather Centre earlier that day when I presented them with a copy of 'Mystery of the Circles' for their archives. Their opinion was cautious and reserved. They were well aware that wind could create marks in cereal fields. That these would be very circular was no surprise. But they had some doubts about the more complex patterns of multiple circles and rather favoured hoaxes in those cases. They then offered BUFORA photocopies of the weather maps for the Cheesefoot Head area surrounding the time of the circle formations the previous week. These were gratefully accepted, even though they did subsequently ask us to pay for them!

With the audience now thoroughly up to date on the range of evidence and the conflicting theories on offer, the seminar ended with the holding of a new vote. This time most people were able to make up their mind. About the same number still believed UFOs were involved (but that was only around 4 % of those in attendance). Dr Meaden's weather based theory achieved a 33 % score from the audience, virtually identical to that garnered by the only other theory to make any impact - hoaxing. BUFORA's position, being that both hoaxes and wind vortices are probably involved, was consequently seen to be a fair one based on this free vote of an independent gathering.

Of course, nothing was resolved. But BUFORA did put the debate to the British people and fulfilled its obligation to be unbiased and objective.

CHAPTER (9): IMPLICATIONS OF THE VORTEX THEORY FOR UFOLOGY

Earlier in this report we made clear why we choose not to link these mystery circles with UFOs. However, semantics apart, IF Dr Meaden is correct then we will face a novel scientific phenomenon which could have many important consequences for the field of UFOlogy.

To illustrate this here are three cases, of differing types, reported to UFOlogists as UFOs. I have had some direct involvement with each one, but could have selected many others from my own experience or the UFO archives. Other UFOlogists will surely recognise reports which seem to fit. Indeed, that is the point. We are not talking about a few isolated examples. We may indeed have a potential scientific explanation for MANY well known and highly attested sightings. I consider that very exciting.

Case One: Autumn 1947 Tibet

The primary witness is Dawn, now the widow of a REME Colonel, a highly moral and Christian person who despite personal infirmity has spent a great deal of her time in charity fund raising.

When the incident occurred she was one of the first western women to be invited to trek across the desert plains from India to Nepal and on into Tibet. Her husband journeyed too, along with a small Gurkha guard and two Plymouth Brethren in a convoy of trucks. After about a week they had stopped near an isolated collection of huts and were sat on the tail of one vehicle when Dawn suddenly felt odd. It was 'like something was touching me'. Others noticed it and the Colonel ran to the front of the truck to investigate. As he did so he fell to the ground as if hit by a hammer blow.

As Dawn rushed to help her husband the vehicles were all vibrating and a terrible oppressive pressure filled the air. She then realised that all the witnesses were observing a 'grey floating mass' heading across the sands towards them. It was the size of a house and 'seemed to be solid in the middle, but the outside seemed like vapour'. It hovered right beside them and seemed so much like a domed UFO that she 'expected the pilot to get out'. Even the hardened soldiers had fear etched into their faces. A strange sensation that I call 'the Oz Factor' now took over. Ambient sounds vanished. Time stood still. These suggest that Dawn involuntarily altered her state of consciousness. Subsequent and prior ESP experiences indicate that she is prone to do this and may have a brain that responds to external triggers such as this 'floating mass' could, perhaps have generated.

Her next memory is of picking her dazed husband up off the floor. The UFO (for she thought of it as that) had vanished. But the most interesting aspect of this case is the physiological effects on the witnesses. Dawn describes a 'prickly sensation - as if my hair was standing on end'. Immediately afterwards the three people who came closest (within several metres) of the UFO all became ill.

These witnesses were Dawn, her husband and the Gurkha Sergeant. They developed an 'itchy, bright red rash' all over the parts of their body that had been directly exposed during the encounter. They felt nauseous and were unable to eat for some hours. These effects lasted two days and disappeared without medication. This sighting had occurred in broad daylight during a warm evening.

It is possible to interpret this as a vortex that was attracted toward the vehicle in its short-lived course across the plateau. However, we have to look to Dr Meaden's ideas to find a possible answer to the severe effects on those witnesses who came closest. As he suggests, vortices can generate ionization. Charged particles in the air may have produced a minor radiation field which produced the slight after effects. What felled the Colonel: - air pressure or an electrical discharge? Possibly Dawn was more susceptible and because of something about her brain chemistry entered an altered state of consciousness (experienced as the 'Oz Factor'). This may offer clues about how a genuine physical phenomenon of novel proportions can in some instances merely be observed (if you remain far enough away - as most of the convoy members fortunately did), can induce physiological effects (if you get too close - as the three unfortunate percipients), and can even generate a truly bizarre 'subjective' close encounter if a witness is prone to shifting consciousness through an accident of brain chemistry.

Refer:- My book 'Abduction' (Hale, 1987, Headline - UK, Inner Light - USA, 1989) for a fuller account of this case... Also see any research by Dr Michael Persinger, who investigates the interaction between brain chemistry and what he calls 'transients' - ie travelling natural radiation fields.

Case Two: 9 March 1977 Nelson, Lancashire

There are many cases akin to the one above. The similarities between this next example (one of the most famous 'car stops' in Britain) should be plain. But it also adds new features.

On the night of 8-9 March 1977 Britain went UFO crazy. The Pennine Hills on the Lancashire/Yorkshire/Derbyshire borders in particular generated dozens of sightings of strange glowing lights. Typical of these cases are the 'circular red light - which changed to a triangle with red light at one corner' - seen from Oswaldtwistle at 20.20 GMT... A 'triangle with little things flying round it' seen by a coach party of 40 people at Barnoldswick at 20.45 GMT... and a 'red glow' seen by several shiftworkers again at Oswaldtwistle at 02.45 GMT.

The point here is that all these independent events were focused within a small area near the town of Burnley, indicating that something odd was occurring in the local atmosphere. The weather (at 03.00 GMT) was light southerly wind at 15 knots, relatively mild and broken strato-cumulus cloud at 3500 feet with alto-cumulus at 10,000 feet. Nothing unusual.

At 03.10 GMT textile shift workers Jeff Farmer and Brian Grimshawe dropped off a canteen worker in the deserted streets of the small industrial community of Nelson. They had just set off back toward the factory when a light seemed to drop from cloud above Pendle Hill.

This hill is notorious for its association with the supernatural and the Pendle witches, which may be important. The strange glow then descended, hovered briefly and moved towards them (travelling on a south easterly course). It drifted very slowly and was so strange they stopped the car (putting on the handbrake but not switching off the ignition).

At close proximity (now within a few tens of metres estimated) the thing was clearly shaped like a horizontal cigar with 'thousands of lights' inset within the middle. These did not pulsate but 'seemed to be moving... It looked as if you were looking at the exhaust of a car when it is red hot'. The lights were red, orange, pink - and, to a lesser extent, green and blue. The edges of the mass were surrounded by a 'grey mist. this went up to the edges of the object but did not appear to cover it'. The object was not, therefore, seen through mist from the side. During the encounter a strange noise described as 'a humming' and 'like the tide coming in and out' was heard. After five minutes the hovering object (seemingly attracted to their car above which it stopped) drifted away still heading south east.

The men had stood outside directly beneath the mass for part of the encounter and describe a sensation of pressure pushing them down 'like the wind'. They also felt a 'tingling' and 'hair standing on end' effect and subsequently developed nausea, pounding headaches and watering, reddening eyes which persisted for no more than a few hours.

More interesting still are the effects on the car (a 9-year old Vauxhall Viva). As the object approached the dipped car headlights dimmed until they almost went out, as if being drained of power. Then the engine went off very suddenly 'as if someone had ripped the wiring out'. Desperate attempts to start the engine again failed - resulting in the temporary exodus from the car as panic set in, followed by instant retreat back inside when they felt the 'invisible force' pushing on them from above. The headlights remained on, but very dim, throughout the entire episode of close proximity. Then, as the mass drifted away, the lights slowly grew back to proper intensity and 'the engine then just started up'. These mechanical effects are clearly very significant.

Dr Meaden believes that the ionization induced in the atmosphere by the vortex is capable of effecting motor vehicles. In this case UFOlogists have a tendency to presume the Nelson UFO was a spaceship that was observing the hapless witnesses and artificially 'cut' their power. However, it is very easy to regard what they saw as a vortex which lead to the effects. Possibly they suffered less severe physiological effects because for most of the encounter they had the shielding of the metal body of their vehicle. It is also worth noting that the area seems to have a historical tradition of strange phenomena (ie the witches etc). Researchers Granville Oldroyd and David Clarke also found a remarkably similar case from August 1914 where two Clitheroe police officers saw a glowing 'sausage' emerge from the sky above Pendle Hill at 02.45 GMT. All of that implies that the area is prone to a recurrent natural phenomenon of some sort.

Refer: *BUFORA case investigation and the 'Vehicle Interference Project Report' (BUFORA, 1979) edited by Geoff Falla.*

Case Three: 28 November 1980 Todmorden, West Yorkshire

This final case is even more important because it represents the 'ultimate' UFO event - a close encounter of the fourth kind or 'alien abduction'. What is more, it is rated by international researchers as one of the best documented and significant cases of the category.

Police officer Alan Godfrey was on night patrol at 05.05 GMT in this small Pennine Hill community just over the Yorkshire border. Again there were other local UFO sightings that night (unknown to him); essentially these were moving lights. The area also has a major tradition of strange phenomena going back many years. Just before clocking off shift Alan decided to drive a few hundred metres from the station along Burnley Road (heading in the direction of Nelson, as it happens). He was looking for some cattle that had allegedly strayed and were bothering a housing estate.

As he drove he suddenly confronted a spinning object that spanned the road ahead. It was 'not unlike a child's spinning top' in shape. There were dark blobs in the centre (interpreted by him as windows) and the rest of the mass was glowing fluorescently. The top half seemed stationary, whilst the lower portion spun anti-clockwise (if viewed from above). That it was a material phenomenon was never in any doubt as he edged the patrol car towards it, then stopped in order to sketch the thing on an accident report pad and clip board beside him. He knew the object was 'physical' because he was close enough for his car headlights to be reflected back and to notice that, although the night was calm with little wind, the trees and bushes at the roadside - but only those immediately adjacent to this object - were shaking as if a wind was being created by the rotation. He did try to radio the base (both on his UHF and VHF sets) but neither functioned.

The next events are confused. Alan Godfrey recalls suddenly looking in amazement as the object had vanished. His car engine was still switched on and he seemed to be slightly further down the road. Turning around he returned to the police station. Later, under questioning from local investigators Harry Harris, Mike Sacks and Norman Collinson the possibility of a ten minute 'time lapse' emerged, based on timing estimates. From this he was ultimately persuaded to undergo regression hypnosis at the hands of several doctors. These sessions occurred many months after the sighting.

Under hypnosis Alan Godfrey 'remembered' getting out and watching the hovering object, then... 'There's a light coming from underneath. I'm getting back in the car - I'M GOING!... Bloody car won't go... Fffffsssh.' At that point the witness throws up his hands and responds in clear terror (as shown on the Harry Harris video film of the hypnosis and attested to by his increase in pulse rate being monitored by the doctor). He goes on to describe being 'floated' into a room and undergoing a strange medical examination at the hands of a robed, bearded figure called 'Yosef' and some tiny metallic robots.

This classic abduction case emerges from three factors. Firstly, a very honest and sincere witness who clearly DID undergo some sort of encounter (as all the intensive investigation has verified). Secondly, the evident physical attributes of the object seen in the first instance. And finally, the bizarre 'on-board memories' that resulted almost entirely from the hypnosis, and which were almost certainly not the product of a hoax or conscious fantasy, according to the psychologists who met Alan Godfrey.

Where do we stand with this very important case? Certainly we can see how Dr Meaden's plasma vortex might have been the object that the police officer encountered above the road. This is suggested by a number of factors, such as the rotation and tree shaking and possibly the ionization that might have blocked out radio reception. A further very important clue comes from the weather. It had rained earlier in the night and the road surface was wet as Alan Godfrey drove along Burnley Road, but a pressure system was just passing over bringing in clear skies. Furthermore, he had in fact returned with another officer to the spot where the UFO had hovered moments after recovering his senses. At that position on the road the two men found the surface 'dry in blotchy patches, despite the rain still lying heavily on other parts of the highway. There seemed a hint of a 'whirlpool' pattern in the slowly disappearing trace...' That sounds very interesting. Did Alan Godfrey encounter a vortex and lose consciousness due to its radiative field? Did he then produce the abduction memories purely because of the induction of hypnotic regression, which can indeed stimulate the mind's ability to create fantasy just as readily as it facilitates recall?

Refer: My book 'The Pennine UFO Mystery' (Grafton, 1983) and, with Peter Hough, 'Death by Supernatural Causes?' (Grafton, 1988)

I find it quite extraordinary how well these cases seem to make sense in the light of the plasma vortex ideas of Dr Meaden. One should include additional insights that have been suggested in the past by UFOlogists seeking more scientific explanations for even highly complex cases. It seems probable that many other 'classic' sightings might bear re-evaluation.

I suspect many people will have most difficulty accepting the Alan Godfrey encounter as an example of a plasma vortex. Yet it offers the best direct evidence of all three. I think the reader should bear in mind what Alan Godfrey himself argues. He has said to me on several occasions since 1980; 'I know that what I saw on the road that night was real.. As for what I said under hypnosis I just do not know'. In February 1988 when appearing with me on a national TV programme he said, very candidly, to the entire nation that he had read several UFO books between the time of his sighting and when the hypnosis occurred and he thought it possible that his 'memory' of the 'abduction' was in fact a dream or fantasy based on that information. If he had lost consciousness, immediately after confronting a UFO - then we could speculate about how he might have 'dreamt' about a spaceship. Of course, to most people seeing a UFO is seeing a spaceship.

If it proves true that we can account for one of the best abduction cases on record in terms of this fascinating new theory then UFOlogy would, quite simply, undergo a revolution.

CHAPTER (10): CONCLUSIONS

The cornfield circles are by far the most intriguing anomaly I have been involved with as a UFOlogist during the past decade. They represent a source of deep fascination to many observers, and like the UFOs that supposedly create them, their existence has become the source of intense controversy throughout the inter-national UFO movement.

These circles represent a great Dilemma for UFOlogists, because for more than four decades they have accepted eye witness accounts of unidentified flying objects with the minimum of criticism or questioning. Now a phenomenon has appeared in which alleged eye witness accounts support a much less exotic solution, even though the effects of the phenomenon seem to be everything UFOlogists might expect from a more exciting stimulus. For some UFOlogists, this dilemma has been too much to bear, and they have manipulated the rules of science to support their own prejudices.

It seems very clear from the available evidence that some circles are being created by hoaxers, whilst the majority of circles are being created by Meaden's vortex mechanisms. We have described important differences between hoaxed circles and the genuine phenomenon in Chapter 4 of this report, and unless conclusive evidence to the contrary is produced I am happy to publically support Dr Meaden's interpretation of events with only minor reservations.

It is true that some of the more intangible characteristics of the circles (eg the linear spurs) have yet to be convincingly accounted for by Meaden's developing vortex theory, but it seems ludicrous and illogical to suggest that because there are a few outstanding questions to be answered, his theory must be wrong. Further research may yet produce convincing arguments to account for these anomalous features and Meaden's vortex model may yet require further modification.

We have demonstrated in this report that the clustering of circles in the "Wessex Corridor" and the apparent progression in the complexity of formation types are both accidents of the manner by which reports come to our attention. We have also demonstrated that similar (and sometimes identical) circles are being reported from all over the world, albeit in much lower numbers than in the UK. These factors indicate that we have a truly unusual and rare 'natural' phenomenon which has avoided public recognition for many years. We believe that recent trends in agricultural factors have affected the conditions under which vortices are capable of leaving geometrical ground traces in maturing arable crops, there seems no need to resort to more fanciful solutions when perfectly ordinary factors can account for the sudden upsurge in the numbers of reported formations.

In the light of these conclusions it seems totally unnecessary to associate the circles with more exotic explanations and I reject the theory that some kind of non-human "intelligence" lies behind the phenomenon without reservation.

When I joined the UFO movement in 1978, I was told that UFOlogists were involved in a scientific quest for knowledge, and that the bad old days when they eagerly accepted stories like "Flying Saucers From Mars" without the slightest question or criticism, were long since forgotten. Regrettably, some modern-day UFOlogists still continue to cling to the old UFOlogy, and they cannot accept that the old UFOlogy is dead and buried, and has been for some years now.

UFOlogists must learn to accept that UFOlogy is not some kind of grand game and that if we expect to be taken seriously by the scientific establishment and the media, we must fulfill our responsibilities towards the advancement of science without dismissing the opinions of respected scientists simply because their theories frequently hold no promise of exotic solutions. In years to come, questions will be asked when it becomes clear that some of our most respected UFOlogical institutions failed to examine the possibilities that Meaden's exciting, original research raises. When these possibilities become accepted fact, I for one will be expecting more than just an explanation.

Paul Fuller Hampshire, June 1989

Paul Fuller

I had a 'UFO' sighting on the M 4 motorway in September 1980, as the text of this book describes. In strict terms it was never turned into a *IFO* by investigation and remains unidentified. But I strongly suspect that it does have a rational explanation in fairly conventional terms. Beyond any shadow of doubt I do not believe it was a spaceship or the product of any hypothetical 'alien' intelligence. What possible grounds could I have for that, save the desire for such an answer and wishful thinking?

In my case I expected PROBE to find a solution and was disappointed when they could not confirm my suspicions of a parachute flare exercise. Years of experience as a (hopefully) sensible UFOlogist have taught me not to assume that any particular UFO incident is likely to be caused by something exotic. The odds are stacked heavily against that probability. We never rule out the small possibility of irresolution. That would be equally naive. Every now and again, something novel and of potential interest to science does come to our attention. However, I am realistic enough to know that if you hope to convince anyone else of that rare piece of evidence it is vital to conduct day-to-day investigations in rational, sensible steps, fully conversant with the facts of UFO life.

These say, however romantic it may be to hope otherwise, we cannot escape the ultimate truth - there nearly always is a mundane explanation.

Soon after this PROBE 'failure' on my own sighting, I heard about their enquiries into the mystery crop circles. Since that time I have examined all the facts and looked very hard at the available evidence concerning what might be responsible. It is gratifying to note that PROBE approached the matter very respectfully and *presumed* there would be an answer. Unlike some other people they did not immediately start to speculate wildly, way out of line with the scientific method. Whilst not being scientists, they behaved rather more scientifically than many who profess to such a title.

In order to find an answer PROBE (and in their wake, BUFORA) then made all the right moves and liaised with the relevant 'experts'. It is ironic in UFOlogy how many double standards we possess. If a witness professes to have been kidnapped by little green men and is examined by a psychologist that person's judgement is quickly accepted as 'proof', because the psychologist is an 'expert'. If Dr Meaden, as a professional physicist and meteorologist, says he can account for the circles and backs this statement up with mountains of hard data, UFOlogists run away and snigger.

The cynic in me says that this is because the psychological verdict - 'this witness is sane' - supports an exotic interpretation, whereas Dr Meaden is talking about much less exotic alternatives. But we must be honest and true to the facts. We are not investigating the UFO or circles phenomenon to prove that men from mars have landed. We are enquiring into fascinating questions that could be of future scientific interest. Frankly, anyone not motivated in such a manner does not deserve to call themselves 'UFOlogist'.

I am not opposed to speculation about the 'mystery circles'. I speculate about UFOs widely in the dozen books that I have published. My contention is that speculation is permitted, but *only* as a companion to fair assessment of the facts and a willingness to accept down-to-earth solutions when not ruled out by those facts. Of course, any UFO incident *might* stem from an 'unknown force field manipulated by unknown intelligences', but if the evidence suggests it *might* also be the product of phenomena more in keeping with known science (although such phenomena may well be interesting in their own right) then it is most unwise to reject the simpler option.

With the circles the two 'first stop' options must be that hoaxers are at work or wind vortices are responsible. We now have several instances of proven or admitted hoaxes and other cases where that is not unlikely. From the eye witness accounts and much other data brought out in this report it is equally obvious to anyone with an open mind that wind vortices *can* and *do* produce circular marks on the ground. Whether they *can* create as many marks as we have in Wessex and of the same level of complexity is more open to question. But that is a secondary issue. Essentially it cannot be denied that these two theories adequately explain the brunt of what we face.

In view of that I see no alternative but to accept these options as by far the most probable explanations for the evidence. Beyond the obvious presence in some instances of an all too *human* intelligence, I just do not see any evidence worth a cent that links the crop circles with alien UFOs or highly controversial intelligent force fields.

However, hoaxing alone cannot work, because of the extent of the evidence, its international scope, its spread around Britain and the known examples prior to 1980. All of that says loud and clear that a natural and recurrent phenomenon lies behind the bulk of the cases. On the other hand, I strongly suspect that the 'pot' is being stirred by hoaxers, who are using the mass publicity and the exotic interpretations put upon the circles either to 'have a laugh' or to expound their own esoteric beliefs.

I have some sympathy with the idea of 'earth energies' and 'force fields'; if these statements mean natural energy and not intelligent or alien forces. In the end it might all be a matter of wording. Meaden's later developments of his theory incorporate plasma lights and ionization and reach (although I doubt he knows it) into areas of exploration much favoured by the modern UFOlogist. In 1989 a good UFO researcher is more likely to talk geophysics and brain chemistry than astrophysics and rocketry. I see exciting possibilities for incorporation of Meaden's work within the UFO field. But we need to be very careful about how we present this, because UFOlogy is a complex business heavily tainted by the many misconceptions foisted on the public by a grossly ill-informed media.

It would be the ultimate irony if we discover that we are all talking about the same thing in our search to explain the mystery circles but have lost ourselves in a battle over semantics.

The British media have been true to form, trivialising and sensationalising the circles to 'foster' a salable myth. However, since 1986 - and dare I say not entirely without BUFORA's influence - there has been an increasing sophistication creeping in. I think, at last, this phenomenon is becoming recognised as a scientific debate over natural energy theories and now sits firmly on the leading edge of modern research. The nonsense about a 'giant spaceship with legs' seems hoary and old fashioned... Shame on any media source which is so limited in its appreciation of the problem that it has to resort to such inanities in future.

We can count that as an achievement and if history shows that Dr Terence Meaden is on the right lines and some minor breakthrough in atmospheric physics results, I will be proud to say that I was a member of BUFORA - the UFO organisation which behaved like a scientific research unit and not a social club for believers in little green men.

If, on the other hand, we are proved wrong and some other explanation wins the day, I will not be dismayed. Merely fascinated. For I remain certain that we conducted this enquiry in a proper manner that was scrupulously honest. BUFORA would tolerate nothing less.

Jenny Randles Cheshire, June 1989



The following comments are from leading researchers in the fields of UFOlogy and meteorology. They were mostly submitted direct to the authors on request for this book and were sometimes edited for reasons of space. We should make clear that none of the contributors have read this report and may well reserve the right to change their minds after doing so!

Comments by Other Researchers

1. Dr John Snow, Associate Professor of Meteorology, Purdue University, Department of Earth & Atmospheric Sciences, Indiana USA. Letter dated 27 March 1989, to Paul Fuller)

(1) The phenomenon could well be a hoax. However, I feel the number of circles observed, the large area over which they have been found, and the apparently long period over which they have been observed (8 or more years) make this an unlikely explanation. The apparent ease in which the few known hoaxes were identified also argues against the vast majority of circles being "manufactured" by some group.

(2) As there is little likelihood that the circles are hoaxes, we must consider them to be evidence of some natural phenomenon. Given what is known about flow around obstacles and the frequent occurrence of circles in apparent association with hills and other topographic features, I support the hypothesis that the circles are produced by some form of vortex resulting from flow over/around a terrain feature. The limited number of eye witness accounts support this hypothesis. It would be very helpful if the circles phenomenon were clearly documented elsewhere in the world.

(3) The details of the process(es) by which the circles are formed, particularly in the cases with the more complex patterns, are very worrisome to me. The points made by Dr Mason (see below) are valid criticisms that need to be answered. I suspect that the response to his criticisms is that to produce the clean cut circles, the atmospheric structure in the lowest 100 meters or so must be "just right", with a proper layering of stable and unstable air.

(4) My laboratory work with vortices shows that many different flow configurations are possible, yet my "back-of-the-envelope" scratchings indicate that only simple circular patterns should be formed, albeit of varying diameters. I do not see how the flow fields known to me can produce the complicated patterns documented by Meaden and others. I suspect that the properties of the crop canopy play an important role in determining what we finally see.

In summary, my current thinking is that some form of vortex phenomenon is at work here, but many (perhaps most?) of the details remain obscure. Continued documentation and systematic field investigations appear warranted. I am waiting to see the response to Meaden's recent article in Weather. However, I am coming to believe that sensationalism works against any serious scientific investigation taking place. This is unfortunate since there are several leading researchers in the UK who are experts in the areas of flow around terrain features who might otherwise be sufficiently intrigued to carry out the requisite field studies.

2. Dr Paul Mason, Head of the Physical Research Section at the Meteorological Office, Bracknell, Berkshire.

(From a letter dated 26 September 1986, to Paul Fuller)

"I am a research worker concerned with flow and turbulence in atmospheric boundary layer: the lowest kilometre or so of the atmosphere. I have also been concerned with vortex generation in flows past surface mounted bodies... It would be foolish to be too dogmatic about whether or not wind could cause circles but I have a few thoughts..."

"I could not rule out (or give much support to) the idea of a very short lived (tornado) being fairly stationary and giving some rough circle of damage. I am also aware in connection with flows past steep hills (slopes greater than perhaps 30 degrees) that the hills can generate trailing vortices and these can give vortex damage on parts of the hill lee slope... Although there are not theories, it is possible to speculate that the orographic flow could interact with the tornado generation to give a preferred and perhaps localised tornado.

"I thus feel that rough circles of the type that some observations may refer to could (but may not be, and you note some difficulties) be caused by a localised tornado... I cannot believe the wind in tornadic structure could be so structured as to give the exact 'ring' (found in some formations). It was just because of this that I offered the view that winds certainly did not cause the effect."

(From a letter dated 24 March 1987, to Jenny Randles) .

"Although I remain interested in these circles, and as you note may get involved with the media again... I am afraid that I find the combination of a BUFORA meeting and the press too risky for a proper resolution to the problem. I must however say that I am impressed with the objective and sincere concern that you and Paul Fuller are giving these phenomena..."

"At the moment I am happy to accept that some of these circles may indeed be caused by short lived whirlwinds. In hilly terrain there are also strong reasons to expect such whirlwinds to form in preferred locations. Having said that I do not believe that the circles with outer rings or very regular satellites are likely to be of meteorological origin. My reasons are just that we don't have any theories... and we do have a number of good reasons to expect more chaos than these patterns suggest."

(From a letter dated 21 February 1989, to Paul Fuller)

"With regard to Dr Meaden's Vortex theory I am afraid that as far as the circles are concerned I don't think it is at all relevant... All observations of such, and other meteorological vortices, are highly turbulent and irregular. I just cannot conceive how any meteorological vortex could produce the highly ordered patterns seen in the cornfields.

"In summary, I do not support the meteorological explanation at all. I am sure that my views will delight the UFOlogists but in spite of difficulties I think the most probable explanation is the ingenuity of some dedicated hoaxers."

3. Ralph Noyes, freelance researcher into anomalous phenomena and former under-secretary heading Ministry of Defence department receiving UFO data.

"It seems quite clear that, whatever the outcome, the cropfield circles present a beautiful and puzzling phenomenon. As in any other area of serious enquiry, there is room for a variety of views. As an interested bystander, I very much hope that you, Andrews & Delgado, Terence Meaden and anyone else with a worthwhile speculation will continue to publish facts and arguments. It's the only way that progress will be made (and I think it will be deplorable if any of us begins to regard the subject as 'private property'; it is clearly of great public interest, and its solution will contribute something to knowledge.)

"I have seen nothing yet...which disposes of the two main difficulties I have at present with the 'meteorological hypothesis': the clustering of reports in the 'accursed corridor' (or 'Wessex Triangle', as some imaginative folk are now calling it !), and the increasing elaboration of the patterns...Both of these characteristics may turn out, of course, to be a mere accident of the way in which reports have accumulated. But we have, after all, had eight years in which to correct the record...And yet we still seem to be stuck with an overwhelming preponderance of occurrences in Wessex and with that remarkable variety of patterns for which I think Meaden is going to be very hard pressed to find a single atmospheric model.

"So it all seems most interesting, and I shall go on watching it with bated breath. What we can probably all agree about is that it isn't being done by a palpable alien life-form in a solid extraterrestrial vehicle ! Hats off to (BUFORA) for keeping the press at bay on that one..."

4. Jerome Clark, editor of International UFO Reporter, widely considered the leading scientific journal in the field, founded by Professor J Allen Hynek and a product of the Center for UFO Studies, based in Illinois

"As to my opinion about the 'mystery circles' : well, believe it or not, I don't have one. I simply don't know what to make of this phenomenon. I respect (BUFORA)s views, which seem reasonable. So, too, do those of Jean Sider, who wrote a letter in response to Fuller's IUR article.

(Sider rejected the meteorological theory due to several factors; eg the complexity of the patterns). "Personally, I confess I don't understand why, if these are natural phenomena, they would be confined solely to the south of England - but then what do I know? This is a controversy I'll continue to follow from the sidelines."

5. Keith Basterfield, leading Australian investigator into UFOs with the UFO Research (Australia) team and author of by far the best UFO book to be published on that continent; 'UFOs: The image hypothesis' (Reed, 1981)

"The type of markings found in the UK over recent years (ie swirled crops) have not appeared in Australia in anything like the numbers you have had. However, when they have occurred, eg 2.5 to 5 metre diameter markings at Bordertown, South Australia in 1973, we have found no definite natural explanation for them to date. On the other hand, there have not been definitely associated UFO sightings coincident with the traces either. My current thoughts are that unless multiple witness reports are made connecting UFOs and these circles, that we must remain with an hypothesis along the meteorological lines suggested by Meaden. For example, I understand that a (rare) tornado went through Bordertown prior to the markings being found there."

6. Bill Chalker, an industrial chemist and Australia's leading researcher into UFOs. He is one of the most knowledgeable students anywhere in the world concerning physical traces found in association with UFOs.

"The evaluation of the vortex theory for mystery circle formations in English cornfields is a good model of cooperation between scientific specialists and UFO researchers. It appears to be a possible explanation for many of the circle formations, that fit the topographic restrictions of the theory.

"The controversies that surrounds the British circles are a classic example of the problem of UFO myth-making from evidence that is poor. Virtually all of the British circles have no direct evidence of a UFO cause. In cases where there is no direct correlation, then speculation has to be sensible and cautious. It strikes me that the vortex model is a cautious approach. It is not, however, proven, but is certainly a better fitting explanation than the 'extraterrestrial' suggestions.

"In any case, where there is an interesting physical trace, that lacks a direct UFO correlation, the physical evidence has to be extraordinary if we are to entertain the possibility of an exotic stimulus. So far the British circles do not provide such evidence.

"I remain open-minded, but must say that on the current evidence I would lean towards a mixture of vortex formations and hoaxing. I have not seen any compelling evidence that would support a UFO connection..."

"Whilst I see the vortex model as being a credible response to the circle controversy, I must however caution about applying it too dogmatically... I have spent some considerable time assessing the evidence of the 1966 Tully 'UFO landing nest' (a swirled circle in an Australian lagoon swamp area which superficially resembles the English crop circles)... I have to state that the vortex model does not apply here for many reasons. The RAAF suggested this as an explanation at the time. It did not fit the facts then, nor does it fit the 'vortex' model as it is currently understood. Providing researchers understand the limitations of the vortex theory, then I see it as a reasonable hypothesis."

7. Hilary Evans is a leading theoretical researcher into all types of anomaly. He has investigated cases in the field and published several erudite books. He has also lectured around the world and has co-edited two compilation studies for BUFORA, including "Phenomenon" (Futura, 1988)

"I believe the 'mystery circles' are indeed a mystery - but a scientific one pure and simple. I see no reason to doubt that Dr Meaden is on the right lines; and although no doubt identifying the cause of the circles will extend our knowledge of atmospheric forces, I do not expect it to take us into any other branch of science."

"I can see that there are anomalous features of the phenomenon which provide a basis for more esoteric hypothesising - for example, the continually escalating sophistication of the patterns. But I suspect that these seeming anomalies are more apparent than real."

"I think we all benefit from monitoring the course of the investigation, for in the process we are learning a lot about public attitudes to 'mysteries', and analysis of response to the circles may help us to evaluate response to other mysterious phenomena from UFOs to spontaneous combustion."

8. Paul Devereux is the foremost authority on 'earth mysteries' and editor of the influential magazine 'The Ley Hunter'. He has also authored several books on the subject of stone circles, leys and 'earth energy'.

"With regards to the crop circles I assume the air vortex theory to be correct. This tells us that nature can produce precision effects - just like my theory of 'earth lights' (See 'Earthlights', Turnstone Press, 1982) ! I am certainly against the idea that these features are anything to do with leys (or 'ley lines' as some people incorrectly call them)."

"Whoever makes that claim should back it up with a survey of the 300-odd circles that have appeared (or however many there now are).

"It is true that the 1988 Odby, Leicestershire circle set was on a church alignment - that must be admitted. It is also a godsend to earth mystery speculators that there was a case near Silbury Hill at Avebury. This is the largest artificial mound in Europe - a major coincidence. But as pointed out by several people the circles here could not have been caused by a solid UFO because of the intact powerlines directly overhead.

"I confess that I still DO find it difficult to believe that a meteorological phenomenon can produce such precise markings and geometrical patterns, but I prefer that theory to any connected with UFOs or ley energies! It merely reveals the surprises that nature still has in store."

9. John Rimmer has been associated with sceptical investigation of the paranormal for many years and is editor of the respected journal, 'Magonia'. A librarian by profession he is author of one book about UFOs.

"The circles represent the first genuinely new anomalous phenomenon, certainly since 1947, possibly since 1897.

"They are undoubtedly real, which puts them one up on practically every other anomalous phenomenon, not excluding UFOs.

"I really cannot see that they are natural phenomena. From the evidence I have seen (which does not include any first hand investigation) they are too regular and structured for that.

"If they are artificially created I am baffled as to how they could be caused. My first reaction on reading of them was that they were hoaxes, perhaps by some people associated with Warminster. It would now appear to be beyond the scope of a small group of cranks and hoaxers. If it is a 'hoax' it is something like a long-term conceptual-art project by a group of students from one of the south coast art schools. But this really is grasping at straws.

"Although it is a much-abused phrase I can only conclude by saying that I have a completely open mind on the topic. None of the explanations has convinced me and none of the debunkers has either.

"I am quite enjoying being baffled."

ACKNOWLEDGMENTS:

The authors would like to thank the many people who assisted in the preparation of this report. Special mention should go to :-
 Ian Mrzyglod and all at PROBE, the investigators with BUFORA and local UFO teams (eg Terry Chivers, Derek James, John Llewellyn, Clive Potter and Ernie Still), William Corliss and the Ordnance Survey for their cooperation, Colin Andrews, Pat Delgado and others at the FSR team, the many eyewitnesses, farm workers, and landowners, Lt. Col. Edgecombe, photographer Chris Wood, all of those researchers who have shared their views for publication (see Chapter 10)...and, a very special thank you to Dr Terence Meaden.

PUBLICATIONS CITED:

FSR	FSR Publications, Snodland, Kent	ME 6 5HJ
J. of Meteorology	54 Frome Road, Bradford-on-Avon, Wilts	BA15 1LD C2216-
Northern UFO News	37 Heathbank Road, Stockport, Cheshire	SK 3 OUP 2482
Ovni Presence	Boite Postale 324, Aix Cedex, 13611	France
Probe Report	Out of print but photocopies may be available via BUFORA	
The Unexplained	Orbis Publications 20/22 Bedfordbury London WC2N 4BT	

The following books may be of interest:

'The Circles Effect and its Mysteries' by Terence Meaden (via Journal of Meteorology, 1989)...Various works by William Corliss and Michael Persinger

ADDRESSES:

You may correspond with the following, but an SAE is appreciated for reply

Paul Fuller	3 Selborne Court, Tavistock Close, Romsey, Hants SO51 7TY	
Dr Terence Meaden	54 Frome Road, Bradford-on-Avon, Wilts	BA15 1LD
Jenny Randles	37 Heathbank Road, Stockport, Cheshire	SK3 OUP

ABOUT BUFORA:

BUFORA, the British UFO Research Association, was formed in 1962 and aims to record, investigate and research reported incidents of unidentified atmospheric phenomena within Britain. This report is compiled by the national investigations committee, via Paul Fuller (local coordinator for Hampshire) and Jenny Randles (national 'Director of Investigations') - who are also both directors of the BUFORA Limited national council. BUFORA stages monthly lecture / debates in London, also several per year in the regions, sponsors conferences and has an extensive archives, library and case report database. Membership, subject to approval, is available to any willing volunteers. Please send an SAE for 'BUFORA INFO' via Jenny Randles.

This report is copyright BUFORA Ltd (1989).
 Permission for reasonable reproduction will be granted upon request.

Printed by Enjay Reprographics, 17 Langbank Avenue, Rise Park, Nottingham NG5 5BU

